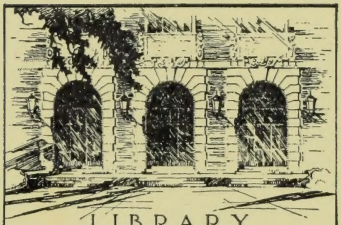

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University of Cincinnati Record

Series I, Vol, III. No. 5. FEBRUARY, 1907.

GRADUATE ANNOUNCEMENT

1907-1908

Published by the University of Cincinnati, at the University Press, Cincinnati, Ohio.

Entered October 30, 1906, at Cincinnati, Ohio, as second-class matter under act of Congress of July 16, 1894.

Series I. Vol. III. No. 5
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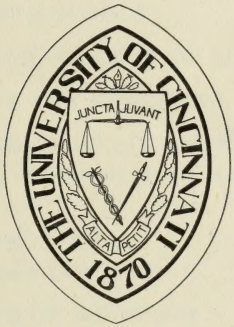

GRADUATE ANNOUNCEMENT

1907-1908

ISSUED MONTHLY.

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
AT THE UNIVERSITY PRESS,
BURNET WOODS, CINCINNATI, O.

Entered October 30, 1906, at Cincinnati, Ohio, as second-class matter
under act of Congress of July 16, 1894.

UNIVERSITY OF CINCINNATI.

The University comprises the following Departments:

I. THE GRADUATE SCHOOL.

II. THE McMICKEN COLLEGE OF LIBERAL ARTS.

III. THE COLLEGE FOR TEACHERS.

IV. THE COLLEGE OF ENGINEERING.
(Mechanical, Electrical, Civil and Chemical Engineering.)

V. THE COLLEGE OF LAW.
(The Cincinnati Law School.)

VI. THE COLLEGE OF MEDICINE.
(Medical College of Ohio.)

VII. THE TECHNICAL SCHOOL.
(A Manual Training High School.)

VIII. THE DEPARTMENT OF CLINICAL MEDICINE.
(The Clinical and Pathological School of the Cincinnati Hospital, Affiliated.)

For the special announcements of the various departments and further information, address:

The Secretary, University of Cincinnati,
Cincinnati, Ohio.

OFFICERS OF ADMINISTRATION.

President of the University—CHARLES WILLIAM DABNEY, Ph. D., LL. D.,
McMicken Hall.

Dean of the Graduate School—JOSEPH E. HARRY, Ph. D.,
Room No. 4, McMicken Hall.

Director of the Observatory—JERMAIN G. PORTER, Ph. D.,
The Observatory, Mt. Lookout.

Clerk of the Board of Directors—DANIEL LAURENCE, B. S.,
University Office, City Hall.

Secretary of the University—FRANK W. BALLOU, B. S.,
Room No. 10, McMicken Hall.

Librarian of the University—CHARLES ALBERT READ, A. B.,
Van Wormer Library Building.

Registrar—LELIA AMANDA GARVIN, B. L.,
Room No. 7, McMicken Hall.

GRADUATE SCHOOL.

CALENDAR.

1907-08.

Sept. 23, Monday.....First semester begins.

Sept. 23, Monday to
Sept. 28, Saturday .....Registration days.

Nov. 28, Thursday.....Holiday, Thanksgiving Day.

Dec. 21, Sat., 12:30 P. M....Christmas vacation begins.

Jan. 3, Friday, 8:30 A. M ...Work resumed.

Jan. 20, Monday, to
Jan. 25, Saturday.....First semester examinations.

Jan. 27, Monday, to
Jan. 29, Wednesday.....Registration for the second semester.

Jan. 28, Tuesday.....Second semester begins.

GENERAL INFORMATION.

FOUNDATION.

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the State of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that State, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869 the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874 the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin Street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, and the gift of $100,000 by David Sinton in 1899.

New departments were also added. In 1872 the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896 the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In the same year a Law Department was established, and six professors of law were appointed, and gave instruction at first in rooms on Fourth Street. But, in 1897, by a contract with the Law School of the Cincinnati College (founded in 1833), a union was effected. The College of Law of the University was to be known as the Cincinnati Law School, and the degree of Bachelor of Laws was to be conferred by the concurrent action of the Board of Directors of the University and the Trustees of the Cincinnati College.

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken Col-

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*For this purpose the city levies annually a special tax of one-twentieth of one mill.

lege of Liberal Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as before.

BUILDINGS AND SITE.

From 1875 to 1895 the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96 the north wing, known as Hanna Hall, was built for the departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900.

A friend of technical education, whose name was not made known, gave the sum of $22,500, in 1901, to provide a building for the Cincinnati Technical School, founded in 1886, and transferred by its Trustees to the Directors of the University in 1901. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. Since 1896 the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. The College of Law, on Ninth Street, occupies a new building, which was completed in 1902 at a cost of $65,000.

BENEFACTIONS.

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

Form of Bequest to University of Cincinnati:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

Form of Bequest to the Endowment Fund Association:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

A gift of two hundred and fifty thousand dollars would be required to erect an Engineering building. Nothing could be of more service to the industries of Cincinnati and to the University.

One hundred thousand dollars would erect a fully equipped gymnasium building. This is another great need of the institution.

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any questions relating to foundations to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY.

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The rooms have been furnished by the University with heavy tables and desks of quartered oak.

The University Library, in this building, contains about 45,000 volumes and 7,800 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The Library is provided with a card catalogue of its own books, and also with card catalogues of the books in the Public Library of Cincinnati and in the Library of the Historical and Philosophical Society of Ohio. It is open every week day from 8 a. m. to 5 p. m.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruhl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archaeology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruhl, and presented to the Library by Mr. Theodore A. Bruhl.

The Wilson Library, consisting mainly of works of literature and criticism, in English, French, and Italian, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Laura Seasongood Alcove contains books purchased annually from the proceeds of an endowment provided in 1894 by the will of the late Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the Uni-

versity of Cincinnati, under the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has deposited its valuable collections of books, pamphlets, and other articles in the Van Wormer Library of the University. This Library comprises some 19,000 volumes and 67,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts given by Aaron Torrence, in 1885, and the late Robert Clarke, in 1897, and others.

The total number of books in the Van Wormer Library Building is 70,000 volumes and 75,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Law	11,000 volumes
The Library of the College of Medicine	3,000 volumes
The Library of the Cincinnati Hospital	17,575 volumes
Total	35,075 volumes

The libraries of the University then, taken altogether, but excluding that of the Historical and Philosophical Society of Ohio, contain 80,075 volumes and 7,800 pamphlets.

The Public Library, of almost 340,000 volumes; the Mercantile Library, containing about 70,000 books, and the Lloyd Library, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum, and the College of Music, are open to University students.

UNIVERSITY PUBLICATIONS.

The University publishes the following periodicals at the University Press:

The University of Cincinnati Record,
Published monthly, from September to June. Its numbers include

The Annual Catalogue.
The Announcement of the Graduate School.
The Announcement of the College for Teachers.
The Announcement of the McMicken College of Liberal Arts.
The Announcement of the College of Engineering.
The Announcement of the College of Law.
The Announcement of the College of Medicine.
The President's Annual Report,

and other pamphlets of special information. Any number of the RECORD will be sent free of charge upon application to the Secretary of the University.

The Teachers' Bulletin,

A monthly publication, from October to June, is intended for the use of teachers in the secondary schools. Several topics of educational interest are treated in each issue. Reviews of current educational literature, hints for teaching, bibliography, and other information valuable to the teacher, are given. Teachers in the preparatory schools may have their names placed on the mailing list free of charge, on request to the Secretary of the University.

The University Studies,

Issued bi-monthly, is a scholarly publication, containing the results of research by members of the Faculty or by other persons connected with the University of Cincinnati.

A price list of the literary and scientific publications of the University may be had by addressing the Secretary of the University.

LABORATORIES.

The laboratory facilities offered in Botany, Zoology, Physiology, Histology, Physics, Chemistry, and Psychology are equaled by few institutions in the West. The industries of the city afford abundant opportunity for the observation of the most recent scientific processes applied to manufacturing.

MUSEUMS.

A collection of casts for a museum of classical archaeology at the University, begun one year ago, is growing rapidly. Students of the classics and of industrial art derive much profit from the collections of the Cincinnati Art Museum; the Museum of the Society of Natural History and the Zoological Garden are utilized

extensively for practical instruction in biological science; the Indian remains and mounds near the city are important for the study of archaeology and history.

THE ALLIANCE FRANCAISE.

The Alliance Francaise, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Francaise, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students at the University of Cincinnati are admitted by season tickets free of charge.

THE UNIVERSITY SETTLEMENT.

The Settlement conducted by the University of Cincinnati was organized in the year 1899. In May of that year a Settlement Association was formed, and in September a house, situated on Liberty and Plum Streets, in one of the most densely populated districts in Cincinnati, was opened, and at present is in full operation.

This house has become the social and educational headquarters of the neighborhood and is frequented by the people from the surrounding tenement houses. There are several residents of the house under whose direction the work is carried on. They are assisted by volunteer workers from the University and city. The constituents of the Settlement are divided into clubs, and these clubs take advantage of the social and educational privileges of the Settlement according as their ages and abilities justify. Some of the features of the Settlement are a gymnasium, circulating library, reading room, a savings bank, a lecture and entertainment course, and four club rooms. It has, besides, a free kindergarten and sewing school. Thus it furnishes an excellent experiment station for those who wish to do work in practical sociology..

This work is under the supervision of a Board of Directors, upon which serve representatives from the Faculty of the McMicken College of Liberal Arts, from the Alumnal Association, from the students of the University, and from business men of the city. Upon this Board devolves the task of raising the sub-

scriptions, by means of which the Settlement is mainly supported.

During the coming year, or possibly two years, the Settlement will conduct a campaign for the municipalization of social and educational activities.

EXPENSES—BOARDING PLACES.

For the session of nine months the expenses of a student in the Graduate School will hardly be less than $325.00, nor need they be more, at a liberal estimate, than $450.00. A directory of suitable boarding places in the vicinity of the University Campus may be found in the Secretary's office. The rates for board and lodging vary from $4.50 to $7.00 a week. A schedule of University fees, which vary in proportion to the amount of work elected, may be found on page 22 of this Announcement.

The Secretary of the University will make every effort to secure employment in the city for students who desire to support themselves wholly or in part while attending the University

GRADUATE SCHOOL.

FACULTY OF THE GRADUATE SCHOOL.

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

WAYLAND RICHARDSON BENEDICT, A. B., Professor of Philosophy.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

EDWARD MILES BROWN, Ph. D., Professor of the English Language and Literature.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Civics.

HARRIS HANCOCK, Ph. D., Dr. Sc., Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D., Professor of Latin.

MAX POLL, Ph. D., Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.

MERRICK WHITCOMB, Ph. D., Professor of History.

LOUIS TRENCHARD MORE, Ph. D., Professor of Physics.

THOMAS EVANS, Ph. D., Professor of Organic and Technical Chemistry.

MICHAEL FREDERIC GUYER, Ph. D., Professor of Zoology.

BURTIS BURR BREESE, Ph. D., Professor of Psychology.

WILLIAM PAXTON BURRIS, A. M., Professor of History and Principles of Education.

JOHN WILLIAM HALL, A. M., Professor of Elementary Education.

STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.

MARCO F. LIBERMA, A. B., Associate Professor of Romance Languages.

OTHER OFFICERS.

M. ELIZABETH J. CZARNOMSKA, A. M., Lecturer on English and Biblical Literature.

*GEORGE MOREY MILLER, A. M. Assistant Professor of English.

*Absent on leave, 1907-08.

JOHN FERGUSON SNELL, Ph. D., Assistant Professor of Inorganic and Physical Chemistry.

JAMES EDMUND IVES, Ph. D., Assistant Professor of Physics.

CLAUDE M. LOTSPEICH, Ph. D., Assistant Professor of German.

EMILIE WATTS McVEA, A. M., Assistant Professor of English.

GEORGE HENRY ALLEN, Ph. D., Assistant Professor of Latin.

ISAAC JOSLIN COX, Ph. D., Assistant Professor of History.

ROYAL LOREN MELENDY, A. B., Assistant Professor of Sociology.

GEORGE WALLACE UMPHREY, Ph. D., Assistant Professor of Romance Languages.

HARRY SHIPLEY FRY, Ph. D., Instructor in Chemistry.

HENRY BAYARD PHILLIPS, Instructor in Mathematics.

SAMUEL JAMES McINTOSH ALLEN, Ph. D., Instructor in Physics.

CHARLES MARSHALL UNDERWOOD, Jr., Ph. D., Instructor in Romance Languages.

CHARLES CHRISTOPHER ADAMS, M. S., Curator of University Museum.

HARRY LEWIS WIEMAN, A. M., Assistant in Biology.

THEODORE THOMAS BELOTE, A. M., Colonial Dames Fellow in Ohio Valley History (1906-7).

STUDENTS

1906-1907

THE GRADUATE SCHOOL.

FELLOWS BY COURTESY.

Eliab Washburn Coy, College Hill, O.

A. M., Brown University, 1858; Ph. D., Princeton University, 1886. (Sanskrit.)

Frederick Alwin King. Cincinnati.....The Roslyn Flats.

A. B., University of Rochester, 1890; A. M., University of Rochester, 1894; Ph. D., University of Cincinnati, 1904. (Sanskrit and Education.)

COLONIAL DAMES FELLOW IN OHIO VALLEY HISTORY.

Theodore Thomas Belote, Bridgetown, Va.....

St. Clair and Ahrens Sts.

A. B., Richmond College, 1902; A. M., ibid., 1903; A. M., Harvard University, 1906. (History.)

D. A. R. FELLOW IN AMERICAN HISTORY.

Helen Louise Stein, Cincinnati.....2823 Park Ave.
A. B., University of Cincinnati, 1905. (History and German.)

THE HANNA FELLOW IN PHYSICS.

Robert E. Clyde Gowdy, Cincinnati.....2115 Auburn Ave.
A. B., University of Cincinnati, 1906. (Physics and Mathematics.)

UNIVERSITY SCHOLARS.

Arthur Thomas Condit, New Albany, Ind.....114 Lyon St.
A. B., Wabash College, 1905. (Greek and Latin.)

Amelia A. Leist, Norwood, O.....4012 Elsmere Ave.
A. B., University of Cincinnati, 1907. (German and French.)

GRADUATE STUDENTS.

Jennie Allgaier, Cincinnati.....Werk Road.
A. B., University of Cincinnati, 1901. (English.)

Ellen Bertha Andrew, Cincinnati.....3600 Shaw Ave.
A. B., University of Cincinnati, 1905. (Education.)

Carl Attig, Cincinnati.....2383 Eastern Ave.
A. B., University of Cincinnati, 1907. (Economics.)

Frank Washington Ballou, Cincinnati.....3231 Bishop St.
B. S., Columbia University, Teachers' College, 1904. (Education and History.)

Edward Andre Barrier, Cincinnati.....56 W. Rochelle St.
B. S., Massachusetts Institute of Technology, 1906. (Chemistry and Economics.)

Florence Baxter, Cincinnati.....724 Oak St.
A. B., University of Michigan, 1904. (Mathematics.)

Mary Julia Bentley, Cincinnati.....3471 Evans Place.
A. B., University of Cincinnati, 1898. (Latin.)

Selma Harriet Bing, Cincinnati.....Forest and Burnet Aves.
A. B., University of Cincinnati, 1907. (History and English.)

Cora May Box, Cincinnati.....275 McGregor Ave.
A. B., University of Cincinnati, 1904. (Biology.)

Maximilian Braam, College Hill, O.
A. B., University of Cincinnati, 1906. (Sanskrit.)

Annette Frances Braun, Cincinnati.....2707 May St.
A. B., University of Cincinnati, 1906. (Economics.)

Hazel T. Cairns, College Hill, O.
A. B., University of Cincinnati, 1906. (History and English.)

Mary Edith Campbell, Cincinnati.....3550 Reading Road.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1906. (Economics.)

Marie Paula Dickore, Cincinnati.....3530 Beechmont Ave.
A. B., University of Cincinnati, 1907. (History and German.)

Ralph Ballard Dimmick, Cincinnati.....McCormick Place.
A. B., University of Cincinnati, 1906. (Chemistry.)

Elizabeth Diserens, Cincinnati.....Price Ave., Price Hill.
A. B., University of Cincinnati, 1902. (Greek and Psychology.)

Alice Moore Donnelly, Cincinnati.....4307 Hamilton Ave.
B. L., University of Cincinnati, 1890. (Latin.)

Mary Elizabeth Emerson.....College Hill, O.
A. B., Wellesley College, 1906. (History, English and Philosophy.)

Elizabeth Rhea Fain, Cincinnati.....533 Ludlow Ave.
A. B., University of Tennessee, 1901. (English and Latin.)

Earl Frederick Farnau.....Grand Ave., Covington, Ky.
A. B., University of Cincinnati, 1905. (Chemistry and Mathematics.)

Alma Sophia Fick, Cincinnati.....1828 Fairfax Ave.
A. B., University of Cincinnati, 1894; A. M., University of Cincinnati, 1898. (English.)

Edna Hermine Fick, Cincinnati.....1828 Fairfax Ave.
A. B., University of Cincinnati, 1899. (Latin.)

Margaret Anne Findley, Cincinnati.....319 Ludlow Ave.
B. L., University of Cincinnati, 1899. (Economics.)

Ira Julian Gaines.....Erlanger, Ky.
A. B., Georgetown College, 1902. (Greek.)

Mrs. Hermine Z. Hansen, Cincinnati.....56 E. McMillan St.
B. L., University of Cincinnati, 1898. (Biology and English.)

Jean Olive Heck, Cincinnati.....632 Barr St.
A. B., University of Cincinnati, 1907. (English and Education.)

Frank Lauren Hitchcock, Cincinnati.....145 University Ave.
A. B., Harvard University, 1896. (Chemistry and Mathematics.)

Emil Homburg, Cincinnati .....104 W. Clifton Ave.
A. B., University of Cincinnati, 1902. (Chemistry.)

Nathan Tovio Isaacs, Cincinnati.....702 W. Ninth St.
A. B., University of Cincinnati, 1907. (Economics and English.)

George Andrew Johnston, Cincinnati.....50 W. St. Clair St.
B. S., University of North Carolina, 1904; M. S., University of North Carolina, 1906. (Chemistry.)

Pliny Andrew Johnston, Cincinnati.....Morton St., Hyde Park.
A. B., University of Cincinnati, 1901. (Economics and Education.)

Arthur Owen Jones, Cincinnati, 2315 Highland Av., Walnut Hills.
B. S., University of Cincinnati, 1899. (Economics and English.)

Ellen Kiely, Cincinnati.....420 Broadway
A. B., University of Cincinnati, 1903. (Romance Languages and History.)

Arthur James Kinsella, Cincinnati.....1615 Hopple St.
A. B., University of Cincinnati, 1903. (Greek and Sanskrit.)

Henry Edward Koch, Cincinnati.....3148 Jefferson Ave.
A. M., University of Cincinnati, 1904. (Biology and German.)

Louis Joseph Kopald, Omaha, Neb.....852 E. Rockdale Ave.
A. B., University of Cincinnati, 1906. (History and English.)

Margaret Elinor Layman, Cincinnati.....619 Crown St.
A. B., University of Cincinnati, 1891; A. M., University of Cincinnati, 1897. (Greek.)

Clifford Spencer Lewis, Cincinnati.....2105 Fulton Ave.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1902. (Mathematics, Physics, and Astronomy.)

Claude M. Lotspeich, Cincinnati.....Auburn Hotel.
A. B., University of Tennessee, 1900; Ph. D., Leipsic, 1903. (Sanskrit.)

Erna Magdalen Lotze, Cincinnati.....Ridgeway Ave.
A. B., University of Cincinnati, 1904. (German.)

Genevieve Rathburn McLeod.....Wyoming, O.
A. B., Wellesley College, 1898. (Greek.)

Blanche Macbrair.....College Hill, O.
A. B., University of Cincinnati, 1906. (English.)

Edward Frank Macke, Cincinnati.....1708 Hewitt Ave.
B. L., University of Cincinnati, 1898; A. M., University of Cincinnati, 1906. (Education and Psychology.)

Anne Susan Mackelfresh, Cincinnati.....756 Froome Ave.
A. B., University of Cincinnati, 1905; A. M., University of Cincinnati, 1906. (Physics.)

John Lee Maddox, Cincinnati.....1615 Baltimore Ave.
A. B., Denison University, 1904. (History.)

Cora March, Wyoming, O.....134 Burns Ave.
A. B., University of Wooster, 1896. (Biology.)

Lucy A. McDowell Meader, Cincinnati.....808 Oak St.
(English.)

Joseph Meitus, Cincinnati.....512 Armory Ave.
M. D., Ohio Medical College. (Biology.)

Elizabeth Merrill, Cincinnati.....52 E. McMillan St.
A. B., University of Cincinnati, 1900; A. M., University of Cincinnati, 1905. (German.)

Jacob Mielziner, Cincinnati.....519 Prospect Place.
A. B., University of Cincinnati, 1900. (Economics and History.)

Charles L. Miller, Cincinnati.....145 Mulberry St.
A. B., University of Cincinnati, 1907. (Education, French and German.)

Charles Louis Ottermann, Cincinnati.....1823 Highland Ave.
A. B., University of Cincinnati, 1906. (Mathematics and History.)

Eleanor Passel, Cincinnati.....2114 St. James Ave.
B. L., University of Cincinnati, 1891. (English.)

Caroline Ann Powell, Cincinnati.....2854 Stanton Ave.
A. B., University of Cincinnati, 1895. (English.)

Henning Webb Prentis, Jr., Cincinnati.....254 Greendale Ave.
A. B., University of Missouri, 1903. (Economics.)

Ora Lee Pride, Cincinnati.....1013 Chapel St.
A. B., Antioch College, 1905. (Psychology, Greek, and Philosophy.)

Matilda Rabenstein, Cincinnati.....2541 Hackberry St.
A. B., University of Cincinnati, 1896; A. M., University of Cincinnati, 1899. (Latin.)

Ida Cunigunde Riesner, Cincinnati.....201 Stetson St.
A. B., University of Cincinnati, 1903. (German.)

Edward Dodson Roberts, Cincinnati.....1620 Dudley St.
A. B., University of Cincinnati, 1899. (Education and English.)

Frances Sherman Rockwell.....Glendale, O.
A. B., Smith College, 1905; A. M., Smith College, 1906. (Education.)

Francis Marion Russell, Cincinnati.....3022 Concordia St.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1906. (Biology, Education, and Psychology.)

Aaron Leland Sapiro, Oakland, Cal.....852 Rockdale Ave.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1905. (English, Greek, and History.)

Sophia Marie Schaeuble.....Hamilton, O.
A. B., Miami University, 1905. (German.)

Amy Lawrence Schoff, Cincinnati.....The Chatham
B. L., University of Cincinnati, 1891. (Latin.)

Elsie Schrader, Cincinnati.....2348 Ohio Ave.
A. B., University of Cincinnati, 1903. (Romance Languages.)

Albert Schwartz, Cincinnati.....1561 Linn St.
A. B., University of Cincinnati, 1906. (Mathematics and Education.)

Harry Lech Senger, Cincinnati.....3206 Woodburn Ave.
A. B., University of Cincinnati, 1898; A. M., University of Cincinnati, 1906. (Latin and Sanskrit.)

Frederick Shaw.....Rushylvania, O.
Ph. B., Ohio University, 1906. (Psychology.)

Benjamin Herman Siehl, Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics, Education, and History.)

Charles F. Siehl, Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics, Education, and History.)

Josephine Clare Smith, Cincinnati.....852 Poplar St.
A. B., University of Cincinnati, 1903. (Education and English.)

W. Carl Spielman, Cincinnati.....505 Shillito St.
A. B., University of Cincinnati, 1905. (Education.)

Flora Eugenie Stoehr, Cincinnati.....1804 Kinney Ave.
A. B., University of Cincinnati, 1900. (English and Education.)

Anna E. C. Strautmann, Cincinnati.....4312 Liston St.
B. S., University of Cincinnati, 1900. (Mathematics and Education.)

Katherine Boteler Strong, Cincinnati.....912 Findlay St.
A. B., University of Cincinnati, 1906. (Mathematics, Astronomy, and History.)

Alice Elvira Von Stein, Cincinnati.....Westminster Hotel.
A. B., Mt. Holyoke College, 1906. (English.)

Nelson Asbury Walker, Cincinnati.....St. Leger Bldg.
A. B., University of Cincinnati, 1895. (Greek.)

Rufus Washington Weaver, Cincinnati.....The Glencoe Hotel.
A. B., Wake Forest, 1893; A. M., Wake Forest, 1894; Th. M., The Southern Baptist Theological Seminary; Th. D., The Southern Baptist Theological Seminary. (Psychology, English, and Philosophy.)

Winifred Paul Webber, Cincinnati.....229 McGregor Ave.
A. M., Defiance College, 1902. (Mathematics and Physics.)

Aaron Lewis Weinstein, Goshen, Ind.....437 Forest Ave.
A. B., University of Cincinnati, 1906. (English and History.)

Alfred Henry Weitkamp, Cincinnati.....3621 Dawson Ave.
A. B., Otterbein University, 1904. (Sociology.)

Harry Lewis Wieman, Cincinnati.....1110 Gest St.
A. B., University of Cincinnati, 1905; A. M., University of Cincinnati, 1906. (Biology and Chemistry.)

Frank L. Williams.....Covington, Ky.
A. B., Berea College, 1889. (Education and Psychology.)

Julia Worthington, Cincinnati.....Frances Lane.
B. S., University of Cincinnati, 1897; M. S., University of Cincinnati, 1899. (Biology.)

TOTAL.....91

INFORMATION FOR STUDENTS.

ADMISSION.

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School.

Students entering the Graduate School should apply to the Dean of the Graduate School, during the first week of either the first or second semester, between the hours of 9 and 12 A. M. September 23-28, 1907, or January 27-29, 1908. If not a graduate of this university the applicant should be prepared to give proof of his academic degree or degrees, and should afford evidence of the character of the courses he has taken in the college from which he has been graduated. On the presentation of satisfactory credentials a card of admission to the Graduate School will be issued to the applicant. Students will not be admitted to the Graduate School after the third week of the semester.

FEES IN THE GRADUATE SCHOOL.

Library Fee.—All graduate students are charged a library fee of five dollars per year.

Tuition.—Tuition is free to residents of Cincinnati. Graduate students not residents of the city are charged tuition at the rate of three dollars per credit hour. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to nine dollars a semester, eighteen dollars per year. All tuition fees are payable in advance.

Laboratory Fees.—Biology, ten dollars per semester in advance. Physics, ten dollars per semester in advance. Chemistry, fifteen dollars per semester in advance.

A deposit of fifteen dollars at the opening of the semester is required of all students taking Chemistry, to insure the University against loss by breakage in the Chemical Laboratory. This deposit will be returned at the end of the year after deductions have been made for breakage.

Diploma Fees.—A diploma fee of ten dollars is required of those who receive the Master's degree and twenty dollars of those who receive the Doctor's degree. This fee must be paid at least two weeks before the day appointed for conferring the degree. If for any reason the degree is not conferred the fee will be returned.

INSTRUCTION.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In order to receive the Master's degree, the candidate must have completed satisfactorily courses representing twenty-four units of graduate instruction, of which at least twelve units shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

For the Doctor's degree, three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than stated

above. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate, at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, of which not more than two shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

Candidates for the Doctor's degree are expected to be able to read French and German, and shall be required to complete forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING.

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY.

Courses in Hebrew taken by graduates of recognized colleges and univérsities at Lane Seminary may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS.

There are at present four Fellowships and twelve Scholarships open to students of the Graduate School. The Fellowships carry a stipend of one hundred to five hundred dollars, as shown below. The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

The Fellowships are as follows:

In the year 1900 the Daughters of the American Revolution established a Fellowship in American History, yielding an income of $100 per year.

The Alliance Francaise of the city of Cincinnati offers a Fellowship of $300, to be awarded to that student in the Department of Romance Languages who shows the greatest proficiency in French. This sum is to be spent in defraying the expenses of a trip to Paris for the successful student.

In the year 1906 the Society of Colonial Dames established a Fellowship in Ohio Valley History of the value of $300 a year.

In the same year Mrs. Henry Hanna and Miss Mary Hanna established a Fellowship in Physics, in honor of Mr. Henry Hanna, of $500 a year.

COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Porter.

The Cincinnati Observatory, constituting the astronomical department of the University, is situated on the highest point of Mount Lookout. The grounds comprise four acres. In the center of this tract is the main building, surmounted by a thirty-foot dome. This dome houses the new equatorial recently built by the Alvan Clark and Sons' Corporation. The diameter of the objective is sixteen inches, and the focal length slightly over twenty feet. The instrument is equipped with driving clock, micrometer, electric lighting and other devices requisite for convenient manipulation. The magnifying powers range from 80 to 800.

In the western wing is placed the meridian circle by Fauth and Co. This instrument has an aperture of five inches and a focal length of seventy inches. The circle is divided to five minutes of arc, and read by four microscopes to single seconds. The sidereal clock, by Molyneux, is also in this wing. The eastern wing is used as a library and computing room.

A smaller observatory, named the O. M. Mitchel Building, in honor of the original founder of the institution, has been erected for the reception of the eleven-inch equatorial. The observatory possesses also a four-inch equatorial by Clark, a sidereal chronometer by Bond, a chronograph by Fauth, and a mean-time clock by Ritchie. The library contains about 3,000 volumes, including most of the star catalogues and many valuable works of reference.

The scientific activity of the Observatory has been uninterrupted since the removal in 1873 to the present site. During this period fifteen numbers of the regular publication have been issued, besides many memoirs which have appeared in the astronomical journals. Special prominence is given to stellar astronomy, many important discoveries having been made in this field. The Observatory is also co-operating at the present time with the International Geodetic Association in the determination of the variation of latitude.

FOR UNDERGRADUATES AND GRADUATES.

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester*, W., 2:00-4:00.

Professor Porter.

5b. Computation of a parabolic orbit from three observations, and of an elliptic orbit with perturbations. Text-book: Watson's *Theoretical Astronomy*. *Second semester*, W., 2:00-4:00.
Professor Porter.

Courses 4a and 5b are given at the Observatory.

BIBLICAL LITERATURE.

Miss Czarnomska.

FOR UNDERGRADUATES AND GRADUATES.

3. Hebrew.—Harper's *Elements of Hebrew* and *Hebrew Method and Manual*; selected reading from the historical books and the Psalms. Two hours throughout the year. Hours to be arranged.
Miss Czarnomska.

FOR GRADUATES.

7. Historical Books and Lyric Poetry of the Old Testament. —General course. Collateral reading of Assyrian, Egyptian and other contemporary history. T., 10:30-11:30, throughout the year. Miss Czarnomska.

8a. The Books of Job, Ruth and the Song of Solomon. T., Th., 11:30-12:30, *first semester*. Miss Czarnomska.

Course 8a is open to students who have passed in Course 7.

9b. The Books of Isaiah, Jeremiah and Ezekiel. T., Th., 11:30-12:30, *second semester*. Miss Czarnomska.

Course 9b is open to students who have passed in Course 8a.

BIOLOGY.

Professor Guyer, Mr. Adams, Mr. Wieman.

LABORATORIES.

The Biological Department occupies the east half of the basement and the second and third floors of Cunningham Hall. The fixtures have been carefully designed to meet all of the requirements of modern biological work, and the laboratories are well provided with optical apparatus and the various instruments of biological technique. Besides these, a liberal supply of more special appliances is at the service of the investigator. Special laboratories are provided for students taking advanced courses and courses of research.

The anatomical laboratory in the basement is provided with slate-top dissecting tables, chemical desks, a stone pier for photomicrography, a tank for air pressure injection and an ice chamber for the storage of animals which are being dissected. Adjoining this laboratory are the museum and two small laboratories for research. A recent valuable addition to the museum is the Balke

Collection of eggs, birds, insects and minerals, the gift of Mr. R. F. Balke of Cincinnati.

On the second floor are the lecture-room, the departmental library, the general biological laboratory, together with its adjoining preparation-room, dark-rooms, and laboratories for students taking advanced courses and courses of research. The lecture-room can be darkened for the use of the stereopticon, and is provided with modern charts and models for purposes of demonstration.

The third floor, under a glass roof, is arranged as a vivarium, and is adapted for research in experimental morphology and physiology. A constant temperature can be maintained by means of special heating apparatus. The room is provided with a large land-and-water cage for amphibia, and a number of large plate-glass aquaria for marine and fresh-water organisms. Ample provision is made, moreover, for breeding and keeping reptiles, birds and mammals, and also for the cultivation of various kinds of plants.

An affiliation has been established between the Biological Department and the Cincinnati Zoological Garden, one of the most famous institutions of its kind in America, whereby University students are offered very exceptional opportunities for the study of the habits and structures of wild animals.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **General Zoology,** is prerequisite to certain advanced courses in Biology, as shown below. Only courses *primarily for graduates* count as graduate credit for students who are electing their major in Biology.

3b. Vertebrate Zoology and Comparative Anatomy. Lectures on the anatomy, classification, habits and distribution of vertebrates, to be accompanied by a study of the living forms in the field at the Zoological Garden. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. The laboratory work consists in the careful dissection of selected forms. M., W., F., 10:30-11:30; M., W., F., 1:00-4:00, *second semester.*

Professor Guyer and Mr. Wieman.

Course 3b is open to students who have passed in Courses 1 and 4a. It is omitted in 1907-08.

4a. Embryology of Vertebrates.—Lectures, demonstrations, and laboratory work, dealing with the history of the germ cells, cleavage of the ovum, embryo formation and the development of the principal organs of the body. The laboratory work is based

largely on the frog, chick and pig. M., W., F., 10:30-11:30; M., W., F., 1:00-4:00, *first semester.*

Professor Guyer and Mr. Wieman.

Course 4a is open to students who have passed in Course 1. It is omitted in 1907-08.

5. **Physiology and Histology.**—Given as one course.

Microscopical Methods and Histology.—The work embraces general and special methods of preparing material for histological or embryological study. The microscopic structure of tissues and organs is studied in conjunction with the work in physiology. Laboratory work on the histology of a given organ or system always precedes the corresponding physiological work.

Physiology.—A discussion of the fundamental principles of physiology and their application to the human body. The lectures are based upon the results derived from the laboratory work. M., W., F., 10:30-11:30; M., W., F., 1:00-4:00, throughout the year. Professor Guyer.

Course 5 is open to students who have passed in Course 1. It is given in 1907-08.

6b. **Field (Animal) Ecology.**—Excursions are made to study the habits of animals, their homes, their dependence one upon another, and their relations to the surrounding physical conditions. Practical directions for collecting, identifying and preserving specimens will form a part of the work. *Second semester.* three credits. One lecture a week, F., 4:00-5:00. Two laboratory periods, to be arranged. Mr. Adams.

PRIMARILY FOR GRADUATES.

8. **Research.**—Hours to be arranged. Professor Guyer.

9. **Current Problems in Biology.**—Lectures to accompany courses in research. A reading knowledge of French or German is required. M., W., 4:00-5:00. Professor Guyer.

12. **Cytology.**—A laboratory course intended to serve as an introduction to cytological technique and to the literature of cellular biology. Each student is assigned a special problem. T., Th., 1:00-4:00. Professor Guyer.

CHEMISTRY.

Professor Evans, Assistant Professor Snell, Dr. Fry.

LABORATORIES.

The Department of Chemistry occupies Hanna Hall Annex and the first floor of Hanna Hall. The main laboratory is devoted to experimental chemistry, qualitative analysis and elementary quantitative analysis. Several small laboratories are provided for special work. A lecture-room, class-room and laboratories for organic, physical and technical chemistry have been equipped to meet the increased demand for instruction in these branches.

The laboratories are well provided with the requisite appliances and facilities for the easy and rapid execution of analytical and experimental work. Students are supplied with the rarer chemicals and all needed apparatus at manufacturers' prices, and the value of the apparatus, returned in good condition, is refunded at the expiration of the course. The laboratories are open the whole of every working day, and their privileges are extended to special and graduate students.

The library of the department is open to students during the day. It contains more than 1,500 volumes, and includes complete sets of all the leading chemical journals, and works of reference in English, French, German and Italian. The current chemical periodicals are kept on file.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses in Chemistry: 6a, **Qualitative Analysis Laboratory**, 7, **Quantitative Analysis Laboratory**, 8b, **Organic Chemistry**; in **Physics**, 1a, 21b, **General Physics**; 2a, 22b, **Experimental Physics**; in French, 1, **Elementary French**, 2, **Intermediate French**; in German, 1, **Elementary German**, 2, **German Prose and Poetry**; in Mathematics, 5, **Calculus, Differential and Integral**, are prerequisite to certain advanced courses in Chemistry, as shown below.

12. **Physical Chemistry.**—Lectures and recitations. A general introductory course of three exercises a week throughout the year in Physical and Electro-chemistry. It is recommended that this course be accompanied by Course 13. T., Th., S., 11:30-12-30.

Assistant Professor Snell.

Course 12 is open to students who have passed in Courses 6a, 7 and 8b; in Physics, Courses 1a, 21b, 2a, 22b; in French, Courses 1 and 2; in German, Courses 1 and 2, and in Mathematics, Course 5. This course may be elected as a minor by graduate students not taking Chemistry as a major.

13. **Physical Chemistry, Laboratory.**—Two exercises a week throughout the year, illustrating the general methods of Physical and Electro-chemistry. T., Th., 1:00-4:00.

Assistant Professor Snell.

Course 13 is intended to accompany Course 12, and is open to students who are taking or have taken that course. This course may be elected as a minor by graduate students not taking Chemistry as a major.

20. **Advanced Organic Chemistry.**—Lectures, embracing a systematic study of the principles and practice of Organic Chemistry, and treating of the constitution, properties and mode of formation of the more important members of each class of organic compounds. T., Th., S., 11:30-12:30.

Professor Evans.

Course 20 is open to students who have passed in Course 4b; in French, Courses 1 and 2; in German, Courses 1 and 2. Students are advised to take Course 8b as a preliminary to Course 20. This course may be elected as a minor by graduate students not taking Chemistry as a major.

21. **Organic Chemistry, Laboratory.**—Practice in ultimate analysis, molecular weight determinations and the preparation of a number of typical organic compounds. M., W., Th., F., 1:00-4:00. Professor Evans.

Course 21 is open to students who have passed in Course 7; in French, Courses 1 and 2; in German, Courses 1 and 2. This course may be elected as a minor by graduate students not taking Chemistry as a major.

24. **History of Chemistry.**—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter from the earliest times to the present, and presents the development of the fundamental laws of the science of chemistry. Special attention will be directed to the classical memoirs of the Greek Philosophers, the tenets of the Alchemists, and those researches of the past century that have developed the Atomic and Structure Theories of modern chemistry. Lectures, collateral readings and papers. T., 4:00-5:00; S., 8:30-9:30.
Dr. Fry.

This course is open to students who have passed in Courses 8b or 20.

PRIMARILY FOR GRADUATES.

30. **Research in Organic Chemistry.**—Eight or more laboratory periods a week, with collateral reading and practice in bibliography. The nature of the research will be determined by the special training and the inclination of the student.
Professor Evans.

31. **Research in Technical Chemistry.**—Eight or more laboratory periods a week, devoted to the solution of some problem in industrial chemistry, with collateral reading and practice in bibliography. The nature of the research will depend upon the special training and the inclination of the student.
Professor Evans.

32. **Research in Physical Chemistry.**—This course will consist of laboratory work and a systematic course of reading along the special line of the investigation. Ample provision will be made for apparatus necessary to facilitate the work. Hours to be arranged. Assistant Professor Snell.

33. **Research in Inorganic Chemistry.**—This course is intended for students who are desirous of investigating some particular problem in inorganic chemistry. It will comprise laboratory work and collateral reading. Hours to be arranged.
Assistant Professor Snell.

34. Seminary in Mathematical Chemistry.—The reading and discussion of important works on Physical Chemistry involving the use of higher mathematics. Two periods a week. Hours to be arranged. Assistant Professor Snell.

ECONOMICS.

(The Sinton Professorship.)

Professor Hicks.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a, **Theory of Economics,** and, 2b **Economic History,** are prerequisite to certain advanced courses, as shown below.

3a. The State and Industries.—A study of the relation of the State to industrial activity, including a consideration of collectivism and individualism. Attention will be given also to the question of public and private ownership of municipal monopolies. T., Th., 3:00-4:00, *first semester.* Professor Hicks.

Course 3a is open to students who have passed in Courses 1a and 2b. It is given in 1907-08; omitted in 1908-09.

4b. Labor.—In this course the existing labor situation is analyzed, special attention being given to labor legislation, organization of laborers and employers, strikes, lockouts, injunctions and arbitration. T., Th., 3:00-4:00, *second semester.* Professor Hicks.

Course 4b is open to students who have passed in Courses 1a and 2b. It is given in 1907-08; omitted in 1908-09.

5a. The Tariff.—A description of the tariff policy of the United States and its relation to existing industrial conditions, with an analysis of the arguments for and against protection. M., W., F., 3:00-4:00, *first semester.* Professor Hicks.

Course 5a is open to students who have passed in Courses 1a and 2d. It is omitted in 1907-08; given in 1908-09.

6b. Money.—The essentials of an efficient monetary system; the problem of standard money, bimetallism *vs.* monometallism; credit money, government and bank issues; the present needs in the United States. M., W., F., 3:00-4:00, *second semester.* Professor Hicks.

Course 6b is open to students who have passed in Course 1a and 2b. It is omitted in 1907-08; given in 1908-09.

7a. Trusts.—The causes and effects of trusts; anti-trust legislation, its character and results; proposed remedies for trust evils; the relation of the trust question to the corporation problem. M., W., F., 3:00-4:00, *first semester.* Professor Hicks.

Course 7a is open to students who have passed in Courses 1a and 2d. It is given in 1907-08; omitted in 1908-09.

8b. Transportation.—This course is devoted principally to a study of the railroad problem. It includes the theory and practice of rate-making, the evils of excessive and discriminating rates, government ownership of railroads, and public control through commissions and general legislation. M., W., F., 3:00-4:00, *second semester.* Professor Hicks.

Course 8b is open to students who have passed in Courses 1a and 2b. It is given in 1907-08; omitted in 1908-09.

9a. Theory of Finance.—The fundamental principles of public finance, with especial reference to taxation. T., Th., 3:00-4:00, *first semester.* Professor Hicks.

Course 9a is open to students who have passed in Course 1a. It is omitted in 1907-08; given in 1908-09.

10b. History of Public Finance.—After a brief survey of the general development of financial systems, the history of public finance in the United States will be taken up and a comparison made with the revenue systems of the leading European nations. T., Th., 3:00-4:00, *second semester.* Professor Hicks.

Course 10b is open to students who have passed in Course 9a. It is omitted in 1907-08; given in 1908-09.

PRIMARILY FOR GRADUATES.

12. Seminary.—This course is intended to afford opportunity for the detailed study of special problems in economics and finance. Credit according to work done. M., 4:00.

Professor Hicks.

EDUCATION.

Professor Burris, Professor Hall.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a, **Ancient and Mediaeval Education,** and 1b **Education in Modern Times,** are prerequiste to certain advanced courses in Education, as shown below.

Education 3a.—Historical and Comparative Study of Secondary Education. Lectures, required readings, reports and discussions. Intended for those who are preparing for positions in secondary schools. Stress will be laid upon such topics as the aims, curricula, and methods of instruction in the various types of American and European secondary schools, the selection and sequence of subjects, equipment, and relations to elementary and higher schools. Open to Seniors and Graduates who have had Education 1a and 1b, and to teachers in secondary schools in Cincinnati and vicinity. *First semester,* M., 4:00-6:00.

Professor Burris.

Education 5b.—Philosophy of Education. Lectures, readings, reports and discussions. An examination of the fundamental principles underlying a rational theory of education as derived from metaphysics, logic, ethics, sociology, psychology, and

biology. Educational problems and processes considered in the light of the presuppositions thus derived. Open, after consultation, to properly qualified Seniors and Graduates. *Second semester,* M., 4:00-6:00. Professor Burris.

PRIMARILY FOR GRADUATES.

Education 7.—Seminary. Investigations and reports on special subjects. For Graduates. Credit according to amount of work done. Th., 4:00-6:00. Professor Burris.

Education 12.—Supervision and Critic Work. Advanced course open to students who have taken Education 8 of 1906-07, and to others properly qualified. Required reading, lectures, and practice in the criticism of lessons observed in the elementary school subjects. Investigation of special problems in elementary school method. Two hours. T., 4:00-6:00, throughout the year. Professor Hall.

Education 14.—Seminary. Problems in Elementary Education. Reports embodying the results of independent research. This course will take up current problems in method, curriculum, and school management, and is open to graduate students and to teachers qualified by study, experience, and maturity of judgment to take it with profit. Two hours. W., 4:00-6:00, throughout the year. Professor Hall.

ENGLISH.

Professor Brown, Miss Czarnomska, *Assistant Professor Miller, Assistant Professor McVea.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **Rhetoric and English Composition,** and Course 3, **Modern English Poetry,** are prerequisite to certain advanced courses in English, as shown below.

5. **Shakespeare and Contemporary Dramatists.**—*Romeo and Juliet, A Midsummer Night's Dream, Hamlet, King Lear, The Tempest.* Private reading of the remaining plays. Selected plays by Ben Jonson, Beaumont and Fletcher, Dekker, Webster and others. Lectures, reports, discussions. M., W., F., 9:30-10:30, throughout the year. Professor Brown.

Course 5 is open to students who have passed in Courses 1 and 3.

14. **The History of the English Drama to 1593.**—Miracle-plays, moralities, interludes. Comedy and tragedy before Shakespeare. Special study of Marlowe and the chronicle-history. Lectures, reports, discussions. M., W., F., 11:30-12:30, throughout the year. Miss Czarnomska.

Course 14 is open to students who have passed in Courses 1 and 3.

*Absent on leave, 1907-08.

19b. The English and Scottish Popular Ballads.—A study of the characteristics of folk-poetry. The origin and development of the popular ballad. Lectures, reading and discussion of selected ballads, comparative study of ballads, reports of reading, essays. T., Th., 1:00-2:00, *second semester.*

Assistant Professor Miller.

Course 19b is open to students who have passed in Courses 1 and 3. It will be omitted in 1907-08.

6. Victorian Poets.—Tennyson, Browning, Arnold, and Rossetti. Study of selected poems and dramas, together with as wide reading as possible in the works of these poets and of contemporary poets. Reports, essays and discussions. M., W., 11:30-12:30, throughout the year. Professor Brown.

Course 6 is open to undergraduates who have passed in Courses 1, 3 and 5, or 14, and have shown aptitude for literary study. Graduates must show satisfactory preparation.

16. Early Nineteenth Century Poets. — Wordsworth, Byron, Shelley, Keats, and some of their contemporaries. W., F., 10:30-11:30, throughout the year. Miss Czarnomska.

The requirements for admission are the same as for Course 6.

17a. Literary Criticism.—An examination of the theories and opinions concerning poetry and the drama of some of the greater critics, from Dryden to Matthew Arnold. Discussions, reports. T., Th., 1:00-2:00, *first semester.* Assistant Professor Miller.

The requirements for admission are the same as for Course 6. Course 17a will be omitted in 1907-08.

18. American Literature.—Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, and some of their contemporaries. T., Th., 1:00-2:00, throughout the year.

Assistant Professor McVea.

Course 18 is open to students who have passed in Courses 1 and 3.

7a. Old English. — An elementary course in Old English (Bright's *Anglo-Saxon Reader*). M., W., F., 8:30-9:30, *first semester.* Professor Brown.

PRIMARILY FOR GRADUATES.

8b.—Old English Poetry.—*Beowulf* or other selected poems. Reading in the history of Old English poetry. M., W., F., 8:30-9:30, *second semester.* Professor Brown.

Course 8b is open to students who have passed in Course 7a.

9. Middle English Poetry.—A study of Chaucer and of selected poems from earlier Middle English poetry (1150-1350). Reading in the history of Middle English literature. T., Th., 8:30-9:30, throughout the year. Professor Brown.

Course 9 is open to students who have passed in or are taking Course 7a. Students who choose English as a major subject must take Courses 7a, 8b and 9.

FOR GRADUATES ONLY.

20. Graduate Study. — Study of special topics in English philology or literature. Credit according to work done, either two, three or four hours. Reports at hours to be arranged.
Professor Brown.

Course 20 is open to a limited number of graduate students who are adequately prepared.

GERMAN.

Professor Poll, Assistant Professor Lotspeich.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 4 in German, **Introduction to German Literature of the Eighteenth Century,** is prerequisite to advanced Course 5.

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following will be read in 1907-08: The *Nibelungenlied* (translated into modern German by R. Woerner); Gottfried von Strassburg's *Tristan* (translated into modern German by W. Hertz); Walther von der Vogelweide's *Gedichte* (translated into modern German by K. Pannier); Lessing's *Nathan*; Schiller's *Wallenstein* and *Braut von Messina*, and Goethe's *Faust*. Lectures in German, collateral reading. M., W., F., 10:30-11:30. Professor Poll.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century. — The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. T., Th., 3:00-4:00. Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition, Advanced Course. — Advanced composition and practice in writing German. S., 9:30-11:30.
Professor Poll.

Course 10 is given in 1907-08.

30. Glimpses of German Life and Culture. Papers and discussions in German. Advanced composition. Two credits per semester for B. A. or M. A. S., 9:30-11:30.
Professor Poll.

Course 30 is omitted in 1907-08.

PRIMARILY FOR GRADUATES.

12a. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. T., Th., 4:00-5:00, *first semester*. Professor Poll.

Course 12a is open to students who have passed in Course 5.

11b.—German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. T., Th., 4:00-5:00, *second semester.*
Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.

7. Middle High-German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. Wednesday afternoon, throughout the year; two hours, to be arranged.
Assistant Professor Lotspeich.

8. Old High-German.—Braune's *Althochdeutsche Grammatik* and the same author's *Althochdeutsches Lesebuch.* During part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. Friday afternoon, throughout the year; two hours, to be arranged.. Assistant Professor Lotspeich.

Course 8 is omitted in 1907-08; given in 1908-09.

26. Old Norse.—Holthausen's *Altislandisches Elementarbuch* and same author's *Altislandisches Lesebuch.* Readings from the Sagas. In the second semester selected poems of the Edda will be read. Friday afternoon, throughout the year; two hours, to be arranged. Assistant Professor Lotspeich.

Course 26 is given in 1907-08.

13. Gothic.—Braune's *Gotische Grammatik.* Translations of Ulfilas. Lectures on Germanic philology. Monday afternoon, throughout the year; two hours, to be arranged.
Assistant Professor Lotspeich.

9. German Seminary.—The origin and development of the German drama. T., Th., 11:30-12:30. Professor Poll.

Course 9 is omitted in 1907-08; given in 1908-09.

GREEK.

Professor Harry.

PRIMARILY FOR GRADUATES.

5. Homer, *Iliad* (1-24)—W., 2:00-3:00. Professor Harry.

6. Practical Exercises in Greek.—Th., F., 2:00-3:00.
Professor Harry.

7. Greek Seminary.—Plato (1907-08); Aristophanes (1908-09). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY.

Professor Whitcomb, Assistant Professor Cox, Mr. ———.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 3, **Reformation.—Revolution.—Napoleon.—**; Course 13, **History of England**; Course 30, **American History to 1783**; and Course 31, **American History from 1783 to 1861**, are prerequisite to certain advanced courses in History, as shown below.

25. **European History since 1815.**—An advanced course dealing with the problems of Contemporary European History. France since 1815; Formation of the German Empire; Union of Italy; the Eastern Question; Existing European Governments; Colonization. T., Th., 10:30-11:30, throughout the year.

Professor Whitcomb.

Course 25 is open to students who have passed in Course 3.

34. **Seminary Course.**—The French Philosophers of the Eighteenth Century. Members must show satisfactory preparation. Two hours a week. Hours to be arranged.

Professor Whitcomb.

22. **Seminary Course.**—For the year 1907-08 the Seminary will take up the history of the Ohio Valley. W., 2:00-4:00.

Mr. ———.

14. **English and American Constitutional History.**—The course will trace the development of English political institutions from the Saxon period to 1688; the transfer of these institutions to America and their development during the Colonial period; and the most important constitutional changes from the Revolution to the Civil War. T., Th., S., 11:30-12:30.

Assistant Professor Cox.

Open only to those who have taken Courses 13 and either Course 30 or Course 31. Omitted in 1907-08.

15. **The Sectional Struggle and National Expansion.**—The course deals with recent American History from the Compromise of 1850 to the present time, and includes a survey of the causes of the Civil War; a review of the main features of that great sectional conflict; the Reconstruction Period; and recent industrial and territorial expansion. T., Th., S., 11:30-12:30.

Assistant Professor Cox.

Open to those who have had Courses 30 or 31.

20. **Seminary in American History.**—The Southwest. The field for intensive study will vary from year to year. Each student will be expected to prepare from original sources formal reports to be submitted to the seminary for comment and criticism. Seniors may be admitted. M., W., 10:30-11:30.

Assistant Professor Cox.

LATIN.

Professor Burnam, Assistant Professor Allen.

FOR GRADUATES ONLY.

Hours in all cases to be arranged.

9. **Latin and Romance Palaeography.**—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century, including an account of books, their makers, materials, etc., in ancient and mediaeval times. Students will have abundant practice in reading facsimilies. Three hours.
Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires a reading knowledge of French and German.

10. **Latin Seminary.**—Three hours. Author studied in 1907-08 will be Vergil. Professor Burnam.

11. **Roman Religion.**—Students must provide themselves with G. Wissowa's *Religion und Kultus der Roemer*, Muenchen, 1902. Two hours. Professor Burnam.

12. **Graduate Study.**—Credit according to work done.
Professor Burnam and Assistant Professor Allen.

21. **Sanskrit.**—A two-hour elementary course, using Whitney's *Grammar* and Lanman's *Reader*. Professor Burnam.
Omitted in 1907-08.

22. **Sanskrit.**—A two-hour course alternating with Course 21. Given in 1907-08. Professor Burnam.

MATHEMATICS AND APPLIED MATHEMATICS.

Professor Hancock, Professor Slocum, Dr. Phillips.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 5, **Calculus, Differential and Integral,** is prerequisite to certain advanced courses, as shown below.

6a. **Advanced Analytical Geometry of Two Dimensions.** — C. Smith, *Conic Sections*. Lectures. T., Th., S., 11:30-12:30, *first semester*. Dr. Phillips.

Course 6a is open to graduate students and to those who have passed in Course 5.

7b. **Analytical Geometry of Three Dimensions.** — The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry*. Lectures, T., Th., S., 11:30-12:30, *second semester*. Dr. Phillips.

Course 7b is open to graduate students and to those who have passed in Course 5.

15. **Theory of Equations, Including Determinants.**—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 11:30-12:30. Professor Hancock.

Course 15 is omitted in 1907-08.

8a. **Advanced Integral Calculus.**—Elliptic Integrals. Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.* Professor Hancock.

9b. **Differential Equations.** — Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.* Professor Hancock.

PRIMARILY FOR GRADUATES.

24. **Elliptic Integrals and Elliptic Functions.**—The theories of Legendre, Abel, Jacobi and of Riemann, Hermite, Weierstrass. Lectures founded on the Berlin Lectures of Fuchs, Schwarz and Weierstrass. T., Th., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

10a. **Theory of Errors and Method of Least Squares.**—The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. W., 4:00-6:00; S., 9:30-10:30, *first semester.* Professor Slocum.

11b. **Fourier's Series and Spherical Harmonics.**—Byerly. *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's and Lame's functions, with applications to problems in heat, electricity, potential, elasticity, etc. W., 4:00-6:00; S., 9:30-10:30, *second semester.* Professor Slocum.

25. **Application of Elliptic Functions.**—The general theory of Course No. 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures, W., 4:00-6:00; S., 11:30-12:30. Omitted in 1907-08. Professor Hancock.

16a. **Theoretical Mechanics.**—Webster, *The Dynamics of Particles and of Rigid, Elastic and Fluid Bodies.* A modern treatment of analytical mechanics intended especially for advanced students in engineering and physics. M., W., F., 2:00-3:00, *first semester.* Omitted in 1907-08. Professor Slocum.

21. **Theory of Functions.**—An advanced course including the Hyperelliptic and Abelian Functions. Lectures. S., 9:30-11:30. Dr. Phillips.

20. **Theory of Maxima and Minima involving several Variables. The Calculus of Variations.** Lectures. W., 4:00-6:00; S., 11:30-12:30. Omitted in 1907-08. Professor Hancock.

18a. **Theory of Minimal Surfaces.**—The developments of Lie, Darboux, Schwarz and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester.* Professor Hancock.

19b. **The Extended Realms of Rationality.** — Lectures. T., Th., S., 8:30-9:30, *second semester.* Professor Hancock.

PHILOSOPHY.

Professor Benedict.

FOR UNDERGRADUATES AND GRADUATES.

7. **Ethics, Advanced.**—Contrasted world-views and their ethical implications. Kantian Ethics. Ethics and Theism. M., W., F., 8:30-9:30. Professor Benedict.

4. **History of Philosophy. Introductory.**—The Pre-Socratic Greek Schools, with an examination of such fragments of their teaching as are accessible in English. An outline of Plato's philosophical doctrine, with an exposition of the same by lecture and discussion. An outline of Aristotle's philosophy, with an exposition of the same. The doctrines of the Stoics. T., Th., 10:30-11:30. Professor Benedict.

8. **History of Philosophy. Advanced.**—Kant's Critical Philosophy. The essential teachings in Critique of Pure Reason. The Practical Reason. An estimate of the Neo-Kantian position. Hours to be arranged with the instructor.
Professor Benedict.

Course 8 is open to those students only who can read the German texts.

PHYSICS.

Professor More, Assistant Professor Ives, Dr. Allen.

The Department of Physics occupies the first floor and the larger part of the basement of Cunningham Hall. The former contains lecture and recitation rooms, offices, library and general laboratories. In the basement are the shops and a number of small rooms fitted for advanced work.

The department is supplied with modern apparatus for illustrating lectures, and for both general and advanced laboratory work. The stock is also being largely increased. A skilled mechanician is employed in making and repairing apparatus. Every facility will be offered students requiring specially constructed apparatus.

The library of the department contains the best works in Physics, and the important journals are on file.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a and 21b, **General Physics,** and 2a and 22b, **Experimental Physics,** are prerequisite to certain advanced courses in Physics, as shown below.

3a. **Theoretical Mechanics.**—A course of lectures on the mathematical laws of mechanics. Three lectures weekly, *first semester.* Assistant Professor Ives.

18b. **Theory of Electricity and Magnetism.**—A course of lectures on the mathematical theory of electricity and magnetism. Three lectures weekly, *second semester.* Professor More.

19a. **Theory of Heat.**—A course of lectures on the mathematical theory of heat. Three lectures weekly, *first semester.* Assistant Professor Ives.

15b. **Theory of Light.**—A course of lectures on the mathematical theory of light. Three lectures weekly, *second semester.* Professor More.

Courses 19a and 15b will be omitted in 1907-1908.

Physics 1a, 21b, 2a, 22b, and Calculus (Math. 5) are prerequisites for Courses 3a, 18b, 19a and 15b.

8. **Experimental Physics.**—The exact determination of some of the standard and classical experiments in physics. Credit according to the number of periods elected. Assistant Professor Ives.

10. **Seminary.**—The reading and discussion of important journals in physics. Once weekly. Assistant Professor Ives.

17a. **Wireless Telegraphy.**—A course of lectures and experimental demonstrations on wireless telegraphy. Three lectures weekly, *first semester.* Assistant Professor Ives.

20b. **Ionization and Radio-activity.**—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. Three lectures weekly, *second semester.* Professor More.

FOR GRADUATES ONLY.

7. **Lectures on the Theory of Mechanics and Sound, Light and Heat, or Electricity and Magnetism.**—Three times weekly. Professor More.

This course is designed to cover three years of work.

9. **Research.** Those electing this course will be supplied with all apparatus needed and the assistance of the mechanician will be at their disposal.

Professor More, Assistant Professor Ives and Dr. Allen.

PSYCHOLOGY.

Professor Breese.

The department occupies two rooms on the second floor of McMicken Hall. One of these rooms is devoted to the laboratory, which is equipped with the apparatus necessary for carrying out the typical experiments in general psychology. The aim of the courses in this department is to give a comprehensive account of the facts of mental life and the methods of investigating them, and to point out the stages of mental development in the race and in the individual. For teachers and those intending to teach there are offered special courses dealing particularly with mental development and the application to education.

PRIMARILY FOR GRADUATES.

3. **Research.** — Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. **Seminar.**—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged. Professor Breese.

ROMANCE LANGUAGES.

Associate Professor Liberma, Assistant Professor Umphrey, Dr. Underwood.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 4, **French Literature in the Seventeenth Century**; Course 6, **Elementary Spanish**; and Course 7, **Elementary Italian**, are prerequisite to certain advanced courses in Romance Languages, as shown below.

8. **Spanish Literature in the Sixteenth and Seventeenth Centuries.**—Cervantes, *Don Quijote*; selected plays of Lope de Vega and Calderón. History of Spanish Literature from the age of Juan II. to the Bourbons. T., Th., 10:30-11:30.
Assistant Professor Umphrey.

Course 8 is open to students who have passed in Course 6. Omitted in 1907-08.

9. **Italian Literature of the Renaissance.** — Representative works of the following authors: Poliziano, Machiavelli, Bembo, Ariosto, Berni, Cellini, Vasari, Guarini, Tasso. Text-book: D'Ancona e Bacci, *Manuale della letteratura italiana*, Vols. 2 and 3. Lectures and collateral reading. T., Th., 9:30-10:30.
Dr. Underwood.

Course 9 is open to students who have passed in Course 7. Omitted in 1907-08.

11. **French Literature in the Nineteenth Century.**—The initiators of the Romantic movement; literature under the First Empire; the Romantic movement. The neo-classic school; the Naturalistic movement; contemporary literature. Lectures and

collateral reading. This course is given wholly in French. T., Th., 9:30-10:30. Associate Professor Liberma.

Course 11 is open to students who have completed Course 4. Given in 1907-08.

13. **French Literature in the Eighteenth Century.** — Montesquieu, Voltaire, Diderot, J. J. Rousseau. Reading of selected works, lectures, reports. This course is given wholly in French. M., W., F., 9:30-10:30. Dr. Underwood.

Course 13 is open to students who have completed Course 4. Omitted in 1907-08.

22. **Spanish Literature in the Nineteenth Century.**—Selected texts and collateral reading; composition; lectures. The following representative works are read: Caballero, *La familia de Alvareda;* Valera, *El Comendador Mendoza;* Alarcón, *El Sombrero de tres picos;* Galdos, *Doña Perfecta;* Tamayo y Baus, *Un drama nuevo;* Zorilla, *Traidor, inconfieso, y martir;* Nuñez de Arce, *El Haz de leña;* Echegaray, *O locura ó santidad*, Espronceda, Bécquer, Campoamor, *Poesías escogidas.* Ford's *Spanish Composition.* T., Th., 11:30-12:30. Assistant Professor Umphrey.

Course 22 is open to students who have passed in Course 6. Given in 1907-08.

PRIMARILY FOR GRADUATES.

12. **Old French.**—*La Chanson de Roland*; Chrétien de Troyes, *Yvain*; *Aucassin et Nicollette.* Old French phonology and inflections; versification. Lectures, text interpretation and collateral reading. T., Th., 1:00-2:00. Dr. Underwood.

Course 12 is open to students who have passed in Course 4. Omitted in 1907-08.

14. **Early Spanish.**—Phonology and Inflections. *El Poema del Cid* and other early monuments of Spanish. History of Spanish Literature to Juan II. T., Th., 11:30-12:30.
Assistant Professor Umphrey.

Course 14 is open to students who have passed in Course 8 or 22. Omitted in 1907-08.

15. **Italian Literature in the Thirteenth and Fourteenth Centuries.** — Selections from Dante, Petrarca, Boccaccio. Early Italian—D'Ancona e Bacci, *Manuale della letteratura italiana,* Vol I; Monaci's *Crestomazia italiana dei primi secoli.* T.,Th., 10:30-11:30. Associate Professor Liberma.

Course 15 is open to students who have passed in Course 7. Given in 1907-08.

16. **History of Old French Literature,** from the Origins to the end of the Fifteenth Century. Lectures and reports. T., Th., 1:00-2:00. Associate Professor Liberma.

Course 16 is open to students who have passed in Course 4. Given in 1907-08.

19. Provencal Language and Literature. — An examination of the phonetic laws underlying the transformation of Vulgar Latin into Provencal; reading of Provencal texts, especially the poetry of the Troubadours. Text-books: Carl Appel, *Provenzalische Chresthomatie* (2nd ed., Leipzig, 1902); Grandgent, *An Outline of the Phonology and Morphology of Old Provencal.* M., W., 2:00-3:00. Assistant Professor Umphrey.

17. Seminary.—The Life and Works of Lamartine, Alfred de Musset, and Alfred de Vigny. (1907-08). Credit according to work done. Hours to be arranged.

Associate Professor Liberma.

Course 17 is open to students only on permission.

SOCIOLOGY.

Assistant Professor Melendy.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduates Courses in 1a, **Principles of Sociology**, and 2b, **Problems in Sociology**, are prerequisite to certain advanced courses in Sociology, as shown below.

4. Seminary in Social Psychology.—This course in the social aspects of human nature is designed for those who have taken Course 1a. Each student may select a particular phase of the subject for special study, reports, etc. The reading of Cooley's *Human Nature and the Social Order* will be required. Credit and hours to be arranged. Assistant Professor Melendy.

5. Seminary in Social Economy.—This course will deal with the social-industrial problems of the modern city. Especial attention will be given to the laboratory method of studying social problems and institutions. The course is open only to those who have taken Course 2b. Credit and hours to be arranged.

Assistant Professor Melendy.

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08/09.

University of Cincinnati Record

Series I, Vol. IV. No. 6. MARCH, 1908.

ANNOUNCEMENT OF THE

GRADUATE SCHOOL

1908-1909

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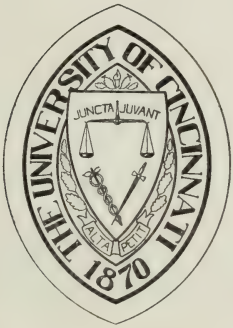

Announcement of the

GRADUATE SCHOOL

1908-1909

ISSUED MONTHLY.

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
AT THE UNIVERSITY PRESS,
BURNET WOODS, CINCINNATI, O.

Entered October 30, 1906, at Cincinnati, Ohio, as second-class matter
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UNIVERSITY OF CINCINNATI.

The University comprises the following departments:

I. THE GRADUATE SCHOOL.

II. THE McMICKEN COLLEGE OF LIBERAL ARTS.

III. THE COLLEGE FOR TEACHERS.

IV. THE COLLEGE OF ENGINEERING.
(Mechanical, Electrical, Civil, and Chemical Engineering.)

V. THE COLLEGE OF LAW.
(The Cincinnati Law School.)

VI. THE COLLEGE OF MEDICINE.
(The Medical College of Ohio.)

VII. THE DEPARTMENT OF CLINICAL MEDICINE.
(The Clinical and Pathological School of the Cincinnati Hospital, Affiliated.)

For the special announcements of the various departments and further information, address:

The Secretary, University of Cincinnati,
Cincinnati, Ohio.

OFFICERS OF ADMINISTRATION OF THE GRADUATE SCHOOL

President of the University—CHARLES WILLIAM DABNEY, Ph. D., LL. D.
McMicken Hall

Dean of the Graduate School—JOSEPH E. HARRY, Ph. D.,
Room No. 4, McMicken Hall.

Director of the Observatory—JERMAIN G. PORTER, Ph. D.,
The Observatory, Mt. Lookout.

Clerk of the Board of Directors—DANIEL LAURENCE, B. S.,
Room No. 6, McMicken Hall.

Secretary of the University—BRENT WOODALL, A. B.,
Room No. 10, McMicken Hall.

Librarian of the University—CHARLES ALBERT READ, A. B.,
Van Wormer Library Building.

Registrar—LELIA AMANDA GARVIN, B. L.,
Room No. 7, McMicken Hall.

Custodian of the University Museum—ADOLPHE B. COVERT,
Room No. 39, Cunningham Hall.

GRADUATE SCHOOL CALENDAR

1908-09.

Sept. 21, Monday	First semester begins.
Sept. 21, Monday,– Sept. 26, Saturday,	Registration days.
Nov. 26, Thursday,– Nov. 28, Saturday,	Thanksgiving recess.
Dec. 21, Monday	Christmas vacation begins.
Jan. 4, Monday	Work resumed.
Jan. 25, Monday,– Jan. 29, Friday,	First semester examinations.
Jan. 30, Saturday	First semester ends.
Feb. 1, Monday,– Feb. 3, Wednesday,	Registration days for second semester.
Feb. 2, Tuesday	Second semester begins.

GENERAL INFORMATION.

FOUNDATION.

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869 the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874 the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin Street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long

inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati.

New departments were also added. In 1872 the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896 the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In the same year a Law Department was established, and six professors of law were appointed, who gave instruction at first in rooms on Fourth Street. But, in 1897, by a contract with the Law School of the Cincinnati College (founded in 1833), a union was effected. The College of Law of the University was to be known as the Cincinnati Law School, and the degree of Bachelor of Laws was to be conferred by the concurrent action of the Board of Directors of the University and the Trustees of the Cincinnati College.

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in cooperation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University —five-tenths of a mill, instead of three-tenths as before.

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*For this purpose the city levies annually a special tax of one-twentieth of one mill.

BUILDINGS AND SITE.

From 1875 to 1895 the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96 the north wing, known as Hanna Hall, was built for the departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. Since 1896 the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. The College of Law, on Ninth Street, occupies a new building, which was completed in 1902 at a cost of $65,000.

BENEFACTORS OF THE UNIVERSITY.

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A Procter, Rev. Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Judge Moses F. Wilson, Eugene F. Bliss, Dr. James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, Rev. P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Charles Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, the alumni of the University, and others.

ENDOWMENT FUND ASSOCIATION.

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as

stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS.

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

Form of Bequest to University of Cincinnati:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

Form of Bequest to the Endowment Fund Association:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

A gift of two hundred and fifty thousand dollars would be required to erect an Engineering building. Nothing could be of more service to the industries of Cincinnati and to the University.

One hundred thousand dollars would erect a fully equipped gymnasium building. This is another great need of the institution.

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any questions relating to foundations to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY.

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The rooms have been furnished by the University with heavy tables and desks of quartered oak.

The University Library, in this building, contains about 50,000 volumes and 8,800 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The Library is provided with a card catalogue of its own books, and also with card catalogues of the books in the Public Library of Cincinnati and in the Library of the Historical and Philosophical Society of Ohio. It is open every week day from 8 a. m. to 5 p. m.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by Mr. Theodore A. Bruehl.

The Wilson Library, consisting mainly of works of literature and criticism, in English, French, and Italian, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Laura Seasongood Alcove contains books purchased annually from the proceeds of an endowment provided in 1894 by the will of the late Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has deposited its valuable collections of books, pamphlets, and other articles in the Van Wormer Library of the University. This Library comprises over 22,000 volumes and 67,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts.

The total number of books in the Van Wormer Library Building is about 78,000 volumes and 76,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Law	11,000 volumes
The Library of the College of Medicine	3,000 volumes
The Library of the Cincinnati Hospital	18,098 volumes
Total	35,598 volumes

The libraries of the University then, taken altogether, but excluding that of the Historical and Philosophical Society of Ohio, contain 85,598 volumes and 8,800 pamphlets.

The Public Library, of 358,000 volumes; the Mercantile Library, containing about 72,000 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum, and the College of Music, are open to University students.

UNIVERSITY PUBLICATIONS.

The University publishes the following periodicals at the University Press:

The University of Cincinnati Record,

Published monthly, from October to June. Its numbers include

The Annual Catalogue.
The Announcement of the Graduate School.
The Announcement of the McMicken College of Liberal Arts.
The Announcement of the College for Teachers.
The Announcement of the College of Engineering.
The Announcement of the College of Law.
The Announcement of the College of Medicine.
The President's Annual Report,

and other pamphlets of special information. Any number of the *Record* will be sent free of charge upon application to the Secretary of the University.

The Teachers' Bulletin,

A monthly publication, from October to June, is intended for the use of teachers. Bibliography, reviews, and other information valuable to the teacher, are given. Teachers in the preparatory schools may have their names placed on the mailing list free of charge, on request to the Secretary of the University.

The University Studies,

Issued bi-monthly, is a scholarly publication, containing the results of research by members of the faculty or by other persons connected with the University of Cincinnati.

A price list of the literary and scientific publications of the University may be had by addressing the Office of the Press.

LABORATORIES.

The laboratory facilities offered in Botany, Zoology, Physiology, Histology, Physics, Chemistry, Psychology, Geology, and in the Engineering departments are equaled by few institutions in the West. The industries of the city afford abundant opportunity for the observation of the most recent scientific processes applied to manufacturing.

MUSEUMS.

The Museum of Natural History is located on the fourth floor of McMicken Hall, and consists of a number of geological and biological collections. Prominent among these are the Lilienthal collection of minerals, the Fechheimer collection of geological and mineralogical specimens, the Wetherby collection of natural history (principally shells) and mineralogical specimens, the Charles F. Windisch collection of five hundred micro-photographs of snow crystals, specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds, and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics, and lastly, a series of specimens illustrating the chemical industries. A skillful collector and taxidermist is at present engaged in completing collections of local material.

The Greek Room contains reproductions of the most noted works of Greek art. There was added to this collection recently a cast of Michael Angelo's "Morning." Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have just been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, and Corinth in the same hall, form a valuable adjunct to the collection of casts in the Art room.

Students of the classics and of industrial art derive much profit from the collections of the Cincinnati Art Museum; the Museum of the Society of Natural History and the Zoological

Garden are utilized extensively for practical instruction in biological science; the Indian remains and mounds near the city are important for the study of archæology and history. Courses in schools of music and fine art, for which Cincinnati is noted, are frequently combined with University work.

THE ALLIANCE FRANÇAISE.

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in cooperation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students at the University of Cincinnati are admitted by season tickets free of charge.

THE UNIVERSITY SETTLEMENT.

The Settlement conducted by the University of Cincinnati was organized in the year 1899. In May of that year a Settlement Association was formed, and in September a house, situated on Liberty and Plum Streets, in one of the most densely populated districts in Cincinnati, was opened, and at present is in full operation.

This house has become the social and educational headquarters of the neighborhood, and is frequented by the people from the surrounding tenement houses.There are several residents of the house under whose direction the work is carried on. They are assisted by volunteer workers from the University and city. The constituents of the Settlement are divided into clubs, and these clubs take advantage of the social and educational privileges of the Settlement according as their ages and abilities justify. Some of the features of the Settlement are a gymnasium, circulating library, reading room, a savings bank, a lecture and entertainment course, and four club rooms. It has, besides, a free kindergarten and sewing school. Thus it furnishes an excellent experiment station for those who wish to do work in practical sociology.

This work is under the supervision of a Board of Directors, upon which serve representatives from the Faculty of the McMicken College of Liberal Arts, from the Alumnal Association, from the students of the University, and from business men of the city. Upon this Board devolves the task of raising the subscriptions, by means of which the Settlement is mainly supported.

THE GRADUATE CLUB.

The members of the Graduate School have organized a Grad-

uate Club, the object of which is to promote social intercourse, the encouragement of wider learning and research, the creation of an intellectual atmosphere, and the advancement of all the interests of the University of Cincinnati.

EXPENSES—BOARDING PLACES.

For the session of nine months the expenses of a student in the Graduate School will hardly be less than $325.00, nor need they be more, at a liberal estimate, than $450.00. A directory of suitable boarding places in the vicinity of the University Campus may be found in the Secretary's office. The rates for board and lodging vary from $4.50 to $7.00 a week. A schedule of University fees, which vary in proportion to the amount of work elected, may be found on page 20 of this announcement.

The Secretary of the University will make every effort to secure employment in the city for students who desire to support themselves wholly or in part while attending the University.

GRADUATE SCHOOL.

FACULTY OF THE GRADUATE SCHOOL.

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Civics.

HARRIS HANCOCK, Ph. D., Dr. Sc., Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D., Professor of Latin.

MAX POLL, Ph. D., Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School

MERRICK WHITCOMB, Ph. D., Professor of History.

LOUIS TRENCHARD MORE, Ph. D., Professor of Physics.

*MICHAEL FREDERIC GUYER, Ph. D., Professor of Zoology.

BURTIS BURR BREESE, Ph. D., Professor of Psychology.

WILLIAM PAXTON BURRIS, A. M., Professor of the History and Principles of Education.

JOHN WILLIAM HALL, A. M., Professor of Elementary Education.

STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.

NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.

MARCO F. LIBERMA, A. B., Professor of Romance Languages.

HENRY HEATH BAWDEN, Ph. D., Professor of Philosophy.

LAUDER WILLIAM JONES, Ph. D., Professor of Chemistry.

ROBERT CLARKSON BROOKS, Ph. D., Professor of Political Science.

GEORGE PHILIP KRAPP, Ph. D., Professor of the English Language and Literature.

*GEORGE MOREY MILLER, A. M., Associate Professor of English.

OTHER OFFICERS.

M. ELIZABETH J. CZARNOMSKA, A. M., Lecturer on English Literature.

HARRIS MILLER BENEDICT, A. M., Assistant Professor of Biology. (In charge, 1908-09.)

JAMES EDMUND IVES, Ph. D., Assistant Professor of Physics.

CLAUDE M. LOTSPEICH, Ph. D., Assistant Professor of German.

EMILIE WATTS McVEA, A. M., Assistant Professor of English.

*GEORGE HENRY ALLEN, Ph. D., Assistant Professor of Latin.

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*Absent on leave, 1908-09.

ISAAC JOSLIN COX, Ph D., Assistant Professor of History.

HARRY SHIPLEY FRY, Ph. D., Assistant Professor of Chemistry.

GEORGE WALLACE UMPHREY, Ph. D., Assistant Professor of Romance Languages.

FRANK WASHINGTON BALLOU, B. S., Assistant Professor of the History and Principles of Education.

JOHN JERMAIN PORTER, Assistant Professor of Metallurgy.

JOHN DOUGAN REA, A. M., Acting Assistant Professor of Latin.

ELIZABETH MERRILL, A. M., Instructor in English.

SAMUEL McINTOSH ALLEN, Ph. D., Instructor in Physics.

EARL FREDERICK FARNAU, A. M., Instructor in Chemistry.

HARRY LEWIS WIEMAN, A. M., Instructor in Biology.

JAMES FRANCIS DILWORTH, A. M., Instructor in English History.

CHARLES NAPOLEON MOORE, S. M., Instructor in Mathematics.

TAYLOR S. CARTER, Ph. D., Instructor in Physics.

STUDENTS.

1907-1908

THE GRADUATE SCHOOL.

THE D. A. R. FELLOW IN AMERICAN HISTORY.

Dickoré, Marie Paula, Cincinnati.....3530 Beechmont Ave.
A. B., University of Cincinnati, 1907. *(History.)

THE COLONIAL DAMES FELLOW IN OHIO VALLEY HISTORY.

Colborn, Earl Francis, Cincinnati.....3003 Scioto St.
A. B., Miami University, 1907. (History.)

THE HANNA FELLOW IN PHYSICS.

Gowdy, Robert E. Clyde, Cincinnati.....2115 Auburn Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1907. (Physics.)

UNIVERSITY SCHOLARS.

Condit, Arthur Thomas, New Albany, Ind., and 114 Lyon St., City.
A. B., Wabash College, 1905. (Greek.)

Braam, Maximilian.....College Hill, O.
A. B., University of Cincinnati, 1906. (Sanskrit.)

Brand, Louis, Cincinnati.....14 W. Charlton St.
Ch. E., University of Cincinnati, 1907. (Physics.)

GRADUATE STUDENTS.

Allgaier, Jennie S., Cincinnati.....Werk Rd.
A. B., University of Cincinnati, 1901. (English.)

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*NOTE.—Major subjects only are given.

Anderson, Catherine L., Cincinnati.....Grandin Rd.
A. B., Bryn Mawr University, 1906. (History.)

Andriessen, Emma.....116 Parker St.
A. B., University of Cincinnati, 1908. (German.)

Ballou, Frank Washington, Cincinnati.....Delmoor Flats.
B. S., Columbia University, Teachers College, 1904. (Education.)

Bentley, Louise Estelle, Cincinnati.....3471 Evans Pl.
A. B., University of Cincinnati, 1907. (Greek.)

Bergman, Erick Frank, Cincinnati.....2509 Trimle Ave.
A. B., University of Cincinnati, 1908. (German.

Black, Caroline Anne.....2125 Fulton Ave.
A. B., University of Indiana, 1907. (Education.

Bosch, Frederick S. C., Cincinnati..... .....2653 Lydell St.
German Theological School, New Brunswick, N. J., 1901. (Philosophy.)

Box, Cora May, Cincinnati.....275 McGregor Ave.
A. B., University of Cincinnati, 1904. (Biology.)

Braun,Annette Frances, Cincinnati.....2702 May St.
A. B., University of Cincinnati, 1906. (Economics.)

Bultman, Elsa, Cincinnati.....2303 Ashland Ave.
A. B. ,University of Cincinnati, 1904; A. M., University of Cincinnati, 1906. (History.)

Burke, Daniel Laurence, Cincinnati.....University Settlement.
B. S., Columbia University, Teachers College, 1906. (Mathematics.)

Burnet, Whittier, Cincinnati.....9 Mathers St.
Ph. B., Ohio State University, 1903. (Latin.)

Burns, Carolyn Ormsby, Cincinnati.....4233 Langland St.
A. B., University of Cincinnati, 1907. (Mathematics.)

Campbell, Mary Edith, Cincinnati.....3550 Reading Rd.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1906. (Economics.)

Clemen, Charlotte, Cincinnati.....2533 Scioto St.
A. B., University of Cincinnati, 1904. (German.)

Coombe, Mary Edna, Cincinnati.....Verona Flats.
A. B., Wellesley College, 1907. (English.)

Cramer, William Gustavus, Cincinnati.....273 Southern Ave.
A. B., University of Cincinnati, 1901. (German.)

Donnelly, Alice M., Cincinnati.....4307 Hamilton Ave.
B. L., University of Cincinnati, 1890. (Latin.)

Dunham, Dr. Kennon, Cincinnati.....2503 Auburn Ave.
M. D., Miami Medical College, 1894. (Physics.)

Ettlinger, Nora, Cincinnati.....3415 Harvey Ave.
B. L., University of Cincinnati, 1895; A. M., University of Cincinnati, 1906. (German.)

Farnau, Earl Francis, Covington, Ky.....432 Main St.
A. B., University of Cincinnati, 1905; A. M., University of Cincinnati, 1907. (Chemistry.)

Fox, Edith, Wyoming, O.....631 Burns Ave.
A. B., Wellesley College, 1904. (German.)

Goebel, Louis W.....Bellevue, Ky.
Elmhurst College. (English.)

Goldsmith, Adele, Cincinnati.....3148 Harvey Ave.
A. B., University of Cincinnati, 1906. (English.)

Good, Joseph M.....McMakin Ave., Winton Pl.
B. S., Mississippi A. and M. College, 1893. (Biology.)

Gordon, Margery, Hamilton, O.....The Hemdil.
A. B., University of Cincinnati, 1901. (Psychology.)

Gosling, Thomas Warrington, Cincinnati.....3527 Middleton Ave.
A. B., Yale University, 1894; A. M., Yale University, 1904. (English.)

Hansen, Hermine Z., Cincinnati.....Glencoe Hotel.
B. L., University of Cincinnati, 1898. (German.)

Heck, Jean Olive, Cincinnati.....632 Barr St.
A. B., University of Cincinnati, 1907. (English.)

Homburg, Emil, Cincinnati.....104 W. Clifton Ave.
A. B., University of Cincinnati, 1902. (Chemistry.)

Howell, Sara Jean, Cincinnati.....2611 Ashland Ave.
A. B., University of Cincinnati, 1900. (English.)

Isaacs, Nathan T., Cincinnati.....702 W. Ninth St.
A. B., University of Cincinnati, 1907. (Economics.)

Johnston, Pliny Andrew, Cincinnati.....Blue Ash, O.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1907. (Education.)

Jones, Arthur Owen, Cincinnati.....Highland Ave., Walnut Hills.
B. S., University of Cincinnati, 1899; A. M., University of Cincinnati, 1907. (Economics.)

Kindle, Joseph Henry, Cincinnati.....University Settlement.
A. B., Ohio State University, 1905; A. M., Ohio State University, 1907. (Mathematics.)

Kinsella, Arthur James, Cincinnati.....1615 Hopple St.
A. B., University of Cincinnati, 1903. (Greek.)

Koch, Henry E., Cincinnati.....3148 Jefferson Ave.
A. M., University of Cincinnati, 1904. (Biology.)

Kohnky, Frances.....Crown St. and Essex Pl.
A. B., University of Cincinnati, 1908. (Education.)

Kopald, Louis Joseph, Cincinnati.....852 E. Rockdale Ave.
A. B., University of Cincinnati, 1906. (History.)

Kruckemeyer, Erna, Cincinnati.....2615 Euclid Ave.
A. B., University of Cincinnati, 1903. (Latin.)

Lanier, Alexander C., Cincinnati.....Auburn Hotel.
A. B., University of Tennessee, 1900; M. E., University of Tennessee, 1905. (Physics.)

Lewis, Clifford Spencer, Cincinnati.....2102 Fulton Ave.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1902. (Mathematics.)

Littell, Jessie, Cincinnati.....2872 E. Montana Ave.
A. B., University of Cincinnati, 1897. (Education.)

Lotspeich, Claude M., Cincinnati.....The Delmoor Flats.
A. B., University of Tennessee, 1900; Ph. D., Leipsic, 1903. (Sanskrit.)

Lotze, Erna Magdalene, Cincinnati.....Ridgeway Ave.
A. B., University of Cincinnati, 1904. (German.)

Maxwell, Caroline Neff.....3439 Evans Pl.
A. B., University of Cincinnati, 1900. (English.

Merrill, Elizabeth, Cincinnati.....220 Southern Ave.
A. B., University of Cincinnati, 1900; A. M., University of Cincinnati, 1905. (German.)

Merrill, Natalie, Cincinnati.....220 Southern Ave.
A. B., University of Cincinnati, 1907. (French.)

Merryweather, Mildred, Cincinnati.....639 Forest Ave.
A. B., University of Cincinnati, 1900. (Italian.)

Mielziner, Jacob, Cincinnati.....519 Prospect Pl.
A. B., University of Cincinnati, 1900. (Philosophy.)

Mihalovitch, Elsie.....808 N. Crescent Ave.
A. B., Smith College, 1906. (French.)

Murdock, Walter, Cincinnati.....45 W. St. Clair St.
B. S., Purdue University, 1907. (Chemistry.)

Oesper Ralph E.....2117 Langdon Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Ottermann, Charles L., Cincinnati.....1823 Highland Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Park, Clyde William, Cincinnati.....49 W. St. Clair St.
A. B., Ohio State University, 1907. (English Philology.)

Parker, Harriet L.....4233 Langland St.
B. L., Bucknell University, 1894. (Philosophy.)

Parker, William Hammond, Cincinnati.....4233 Langland St.
Ph. B., Bucknell University, 1897. (Economics.)

Peaslee, Leon D., Cincinnati.....2362 Ohio Ave.
A. B., University of Cincinnati, 1907. (Biology.)

Porter, John J.....3441 Observatory Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Powell, Caroline Ann, Cincinnati.....2854 Stanton Ave.
A. B., University of Cincinnati, 1895. (English.)

Raresheid, Lilian, Cincinnati.....512 Milton St.
A. B., University of Cincinnati, 1907. (English.)

Rhinow, Arthur B., Cincinnati.....1104 Dayton St.
A. M., University of Cincinnati, 1905. (Philosophy.)

Ritchey, James W., Cincinnati.....415 Considine Ave.
A. B., Princeton University, 1893; A. M., Princeton University, 1894. (Physics.)

Roos, Augusta Louise.....131 Parker Ave.
A. B., University of Cincinnati, 1908. (German.)

Rover, Paul Philip.....125 W. McMillan St.
A. B., University of Cincinnati, 1907. (Biology.)

Rowell, Mary Emma, Cincinnati.....428 Carlisle Ave.
A. B., University of Cincinnati, 1907. (Mathematics.)

Russell, Francis Marion, Cincinnati.....3022 Concordia St.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1906. (Biology.)

Saffran, Paul Gustav, Cincinnati.....30 Conklin St.
Elmhurst College, 1897. (Philosophy.)

Sapiro, Aaron, Cincinnati.....852 Rockdale Ave.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1905. (History.)

Sauer, Louis Wendlin, Cincinnati.....2101 Central Ave.
A. B., University of Cincinnati, 1907. (Biology.)

Schoff, Amy L., Cincinnati.....The Chatham.
B. L., University of Cincinnati, 1891. (Latin.)

Schwartz, Albert, Cincinnati.....1334 Lincoln Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Sears, Isabel.....Norwood, O.
A. B., University of Cincinnati, 1905. (English.)

Senger, Harry L., Cincinnati.....3206 Woodburn Ave.
A. B., University of Cincinnati, 1898; A. M., University of Cincinnati, 1906. (Latin.)

Siehl, Benjamin, Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Siehl, Charles F., Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Simon, Jacob Weber, Cincinnati.....257 Considine Ave.
A. B., Ohio Wesleyan University, 1887. (Physics.)

Simrall, Josephine Price, Covington.....316 Wallace Ave.
B. S., Wellesley College, 1893. (Economics.)

Singer, Jacob, Buffalo, N. Y., and.....1335 Myrtle Ave., City.
A. B., University of Cincinnati, 1907. (Philosophy.)

Stein, Alice E. von, Cincinnati.....The Teranagh.
A. B., Mt. Holyoke College, 1906. (English.)

Thayer, Gordon Woods, Cincinnati.....304 Oak St.
A. B., Harvard University, 1906; A. M., Harvard University, 1907. (Latin.)

Thomas, Alma Holdt, Cincinnati.....2626 May St.
A. B., University of Cincinnati, 1900. (German.)

Walker, Nelson Asbury, Cincinnati.....48 St. Leger Flats.
A. B., University of Cincinnati, 1895. (Greek.)

Ware, Clarence O. G., Cincinnati.....Lane Seminary.
A. B., Cedarville College, 1907. (Philosophy.)

Watkins, E. A., Cincinnati.....215 Albion Pl.
A. B., Defiance College, 1907. (Philosophy.)

Webber, Winifred Paul, Cincinnati.....229 McGregor Ave.
A. M., Defiance College, 1902. (Mathematics.)

Weber, Mary Elizabeth, Cincinnati.....6 Linton St.
A. B., University of Cincinnati, 1907. (Education.)

Williams, Frank L.....Covington, Ky.
A. B., Berea College, 1889; A. M. University of Cincinnati, 1907. (Education.)

Wilson, Florence L., Cincinnati.....229 Congress Ave.
A. B., University of Cincinnati, 1901. (Latin.)

Wolf, Horace Joseph, Cincinnati.....819 Glenwood Ave.
A. B., University of Cincinnati, 1907. (Philosophy.)

Woodall, Brent.....439 Greenup St., Covington, Ky.
A. B., University of Cincinnati, 1907. (English.)

INFORMATION FOR STUDENTS.

ADMISSION.

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School.

Students entering the Graduate School should apply to the Dean of the Graduate School, during the first week of either the first or second semester, between the hours of 9 and 12 A. M. September 21-26, 1908, or February 1-3, 1909. If not a graduate of this university the applicant should be prepared to give proof of his academic degree or degrees, and should afford evidence of the character of the courses he has taken in the college from which he has been graduated. On the presentation of satisfactory credentials a card of admission to the Graduate School will be issued to the applicant. Students will not be admitted to the Graduate School after the third week of the semester.

FEES IN THE GRADUATE SCHOOL.

Library Fee.—All graduate students are charged a library fee of five dollars per year.

Tuition.—Tuition is free to residents of Cincinnati. Graduate students not residents of the city are charged tuition at the rate of three dollars per credit hour. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to nine dollars a semester, eighteen dollars per year. All tuition fees are payable in advance.

Laboratory Fees.—Biology, ten dollars per semester in advance. Physics, ten dollars per semester in advance. Chemistry, fifteen dollars per semester in advance.

A deposit of fifteen dollars at the opening of the semester is required of all students taking Chemistry, to insure the University against loss by breakage in the Chemical Laboratory. This deposit will be returned at the end of the year after deductions have been made for breakage.

Diploma Fees.—A diploma fee of ten dollars is required of those who receive the Master's degree and twenty dollars of those who receive the Doctor's degree. This fee must be paid at least two weeks before the day appointed for conferring the degree. If for any reason the degree is not conferred the fee will be returned.

INSTRUCTION.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In order to receive the Master's degree the candidate must have completed satisfactorily courses representing twenty-four units of graduate instruction, of which at least twelve units shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

For the Doctor's degree three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate, at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, of which not more than two shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the

approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

Candidates for the Doctor's degree are expected to be able to read French and German, and shall be required to complete forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING.

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE.

Courses in Hebrew taken by graduates of recognized colleges

and universities in Lane Seminary and in the Hebrew Union College may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS.

There are at present three fellowships, a traveling scholarship, and ten scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. (See list given below.) The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

FOUNDATIONS.

In the year 1900 the Daughters of the American Revolution established a Fellowship in American History, yielding an income of $100 per year.

In the year 1904 the Alliance Francaise of the city of Cincinnati established a Scholarship of $300, to be awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Francaise in Paris.

In the year 1906 the Society of Colonial Dames established a Fellowship in Ohio Valley History of the value of $300 a year.

In the same year Mrs. Henry Hanna and Miss Mary Hanna established a Fellowship in Physics, in honor of Mr. Henry Hanna. The value of this fellowship is $500 a year.

COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Porter.

The Cincinnati Observatory, constituting the astronomical department of the University, is situated on the highest point of Mount Lookout. The grounds comprise about six acres. In the center of this tract is the main building, surmounted by a thirty-foot dome. This dome houses the new equatorial recently built by the Alvan Clark and Sons' Corporation. The diameter of the objective is sixteen inches, and the focal length slightly over twenty feet. The instrument is equipped with driving clock, micrometer, electric lighting and other devices requisite for convenient manipulation. The magnifying powers range from 80 to 800.

In the western wing is placed the meridian circle by Fauth and Co. This instrument has an aperture of five inches and a focal length of seventy inches. The circle is divided to five minutes of arc, and read by four microscopes to single seconds.

The sidereal clock, by Molyneux, is also in this wing. The eastern wing is used as a library and computing room.

A smaller observatory, named the O. M. Mitchel Building, in honor of the original founder of the institution, has been erected for the reception of the eleven-inch equatorial. The Observatory possesses also a four-inch equatorial by Clark, a sidereal chronometer by Bond, a chronograph by Fauth, and a mean-time clock by Ritchie. The library contains about 3,500 volumes, including most of the star catalogues and many valuable works of reference.

The scientific activity of the Observatory has been uninterrupted since the removal in 1873 to the present site. During this period fifteen numbers of the regular publication have been issued, besides many memoirs which have appeared in the astronomical journals. Special prominence is given to stellar astronomy, many important discoveries having been made in this field. The Observatory is also cooperating at the present time with the International Geodetic Association in the determination of the variation of latitude.

FOR UNDERGRADUATES AND GRADUATES.

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester*; hours to be arranged.
Professor Porter.

5b. Computation of a parabolic orbit from three observations, **and of an elliptic orbit** with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester*; hours to be arranged.
Professor Porter.

Courses 4a and 5b are given at the Observatory.

† BIOLOGY.

***Professor Guyer, Assistant Professor Benedict, Mr. Wieman.**

To pursue advanced courses in biology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

Students who desire to be recommended as teachers of biology in secondary schools must complete, as a minimum, undergraduate Courses 1a to 8b inclusive and Courses 11a, 15a, 16a, 17b, 18b. It is very desirable that they also do at least one year of graduate work.

REQUIREMENTS FOR DEGREES.

To enter upon work for the degree of Master of Arts in zoology students must have completed Courses 1a, 2a, 3b, 4b, 10b, 15a, 16a, 17b, 18b, or their equivalent. Courses for "Undergradu-

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† For a statement of the undergraduate courses prerequisite to advanced work in Biology, see the announcement of the McMicken College of Liberal Arts.

* Absent on leave, 1908-09.

ates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy the work required approximates that of the full course for the degree of Master of Arts in zoology. The requirements for a higher degree, when biology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 21).

LABORATORIES.

The Biological Department occupies the east half of the basement and the second and third floors of Cunningham Hall. The fixtures have been carefully designed to meet all of the requirements of modern biological work, and the laboratories are well provided with optical apparatus and the various instruments of biological technique. Besides these, a liberal supply of more special appliances is at the service of the investigator. Special laboratories are provided for students taking advanced courses and courses of research.

The anatomical laboratory in the basement is provided with slate-top dissecting tables, chemical desks, a stone pier for photomicrography, a tank for air pressure injection and an ice chamber for the storage of animals which are being dissected. Adjoining this laboratory are two small laboratories for research.

On the second floor are the lecture-room, the departmental library, the general biological laboratory, together with its adjoining preparation-room, dark-rooms, and laboratories for students taking advanced courses and courses of research. The lecture-room can be darkened for the use of the stereopticon, and is provided with modern charts and models for purposes of demonstration.

The third floor, under a glass roof, is arranged as a vivarium, and is adapted for research in experimental morphology and physiology. A constant temperature can be maintained by means of special heating apparatus. The room is provided with a large land-and-water cage for amphibia, and a number of large plate-glass aquaria for marine and fresh-water organisms. Ample provision is made, moreover, for breeding and keeping reptiles, birds and mammals, and also for the cultivation of various kinds of plants.

An affiliation has been established between the Biological Department and the Cincinnati Zoological Garden, one of the most famous institutions of its kind in America, whereby University students are offered very exceptional opportunities for the study of the habits and structures of wild animals.

FOR UNDERGRADUATES AND GRADUATES.

15a. Embryology of Vertebrates.—Lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 16a. *First semester*, M., W., F., 10:30-11:30.

Mr. Wieman.

Course 15a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 15a and 19a are given in alternate years.

16a. Embryology, Laboratory.—The work is based largely on the frog, chick, and pig. *First semester*, M., W., F., 1:00-4:00.

Mr. Wieman and Mr. Peaslee.

Course 16a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 16a and 20a are given in alternate years.

17b. Vertebrate Zoology and Comparative Anatomy.—Lectures on the anatomy, classification, habits, and distribution of vertebrates, to be accompanied by a study of the living forms in the field and at the Zoological Garden. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester*, M., W., F., 10:30-11:30. Mr. Wieman.

Course 17b is open to students who have passed in Courses 15a and 16a.

Courses 17b and 21b are given in alternate years.

18b. Comparative Anatomy of Vertebrates, Laboratory.—The work consists in the careful dissection and study of selected forms. *Second semester*, M., W., F., 1:00-4:00.

Mr. Wieman and Mr. Peaslee.

Course 18b is open to students who have passed in Courses 15a and 16a.

Courses 18b and 22b are given in alternate years.

19a. Animal Histology.—Lectures and recitations upon the microscopic structure of tissues and organs. This course must be accompanied by Course 20a. *First semester*, M., W., F., 10:30-11:30. Professor Guyer.

Course 19a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 19a and 15a are given in alternate years; 19a will be omitted in 1908-09.

20a. Animal Histology, Laboratory.—Practical studies on the microscopic anatomy of animal tissues and organs. *First semester*, M., W., F., 1:00-4:00. Professor Guyer.

Course 20a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 20a and 16a are given in alternate years; 20a will be omitted in 1908-09.

21b. Physiology.—Discussion of the fundamental principles of physiology and their application to the human body. This course must be accompanied by Course 22b. *Second semester*, M., W., F., 10:30-11:30. Professor Guyer.

Course 21b is open to students who have passed in Courses 19a and 20a.

Courses 21b and 17b are given in alternate years; 21b will be omitted in 1908-09.

22b. **Physiology, Laboratory.**—The student is required to perform the classical experiments on blood, circulation, respiration, absorption, muscle and nerve, central nervous system, and sense organs. *Second semester*, M., W., F., 1:00-4:00.

Professor Guyer.

Course 22b is open to students who have passed in Courses 19a and 20a.

Courses 18b and 22b are given in alternate years; 22b will be omitted in 1908-09.

23. **Field Work.**—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three hour course. Hours to be arranged. Assistant Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany or zoology.

24a. **Plant Histology.**—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester*, T., 10:30-11:30. Assistant Professor Benedict.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

Omitted in 1908-09; given in 1909-10.

25a. **Plant Histology, Laboratory.**—In this course the student will be given sufficient practice in miscroscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester*, M., W., 1:00-4:00.

Assistant Professor Benedict and Mr. Sauer.

Omitted in 1908-09; given in 1909-10.

26b. **The Reproduction and Embryology of the Spermatophytes.**—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester*, T., 10:30-11:30.

Assistant Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

Omitted in 1908-09; given in 1909-10.

27b. **Reproduction of the Angiosperms.**—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own prepa-

rations. This course must be taken in connection with Course 26b. *Second semester,* M., W., 1:00-4:00.

Assistant Professor Benedict and Mr. Sauer.

Omitted in 1908-09; given in 1909-10.

PRIMARILY FOR GRADUATES.

30. **Current Problems in Biology.**—Lectures to accompany courses of research. A reading knowledge of French or German is required. M., Th., 4:00-5:00. Mr. Wieman.

31. **Research.**—Hours to be arranged.

Assistant Professor Benedict and Mr. Wieman.

32. **Cytology.**—A laboratory course intended to serve as an introduction to cytological technique and to the literature of cellular biology. Each student is assigned a special problem. T., Th., 1:00-4:00. Professor Guyer.

Omitted in 1908-09.

*CHEMISTRY.

Professor Jones, Assistant Professor Fry, Assistant Professor Porter, Mr. Farnau.

PREFATORY.

There never was a period when chemistry touched the various sciences and the requirements of practical life at so many points as it does at the present time. This manifold relationship has made it necessary to arrange courses in chemistry which may be sufficiently varied to suit the requirements of many classes of students. A choice of consecutive courses may be made by students who are taking chemistry as a disciplinary study, and with a desire to complete a general education. Many courses have been offered which have a definite and intimate relationship to the industrial activities of modern life. These are designed to meet the needs of those who are planning to become chemical engineers, or of those who expect to enter upon a business career which makes such a knowledge of chemistry a necessity. Furthermore, a number of specialized courses of an advanced character have been announced to give the proper training to those students who may wish to carry on graduate work in the nature of research leading to a Master's or a Doctor's degree. For such advanced work in chemistry, students must acquire a reading knowledge of German and French very early in the course, since an acquaintance with these languages is assumed in the later work.

EQUIPMENT.

The Department of Chemistry occupies quarters in Hanna Hall Annex and the first floor of Hanna Hall. The main laboratories are devoted to general inorganic chemistry, elementary

* For a statement of the undergraduate courses prerequisite to advanced work in Chemistry, see the announcement of the McMicken College of Liberal Arts.

organic chemistry, qualitative and quantitative analysis. There are special laboratories arranged for courses in organic, physical, and technical chemistry. A thoroughly equipped laboratory has been provided for metallurgical work; gas and electric furnaces, motor-driven blowers, grinders, and other machines have been installed. Several private laboratories are provided for instructors, and for graduate students who are engaged in research. The laboratories are open from 8.30 a. m., to 5 p. m. on every working day except Saturday, when they close at 1:00 o'clock.

The laboratories are well provided with the requisite apparatus for the rapid execution of all kinds of experimental work. Students are supplied with chemicals and apparatus at manufacturers' prices, and the value of the apparatus returned in good condition is refunded at the end of the course. Concerning laboratory fees and special deposit, see the announcement, p. 20.

THE LIBRARY.

A special Chemical library, comprising about 2,000 volumes, has commodious quarters on the first floor of Hanna Hall. It contains almost complete series of the important periodicals in English, German, French, and Italian, and nearly all current chemical journals are kept on file. The standard hand-books and works of reference, and many special and technical works of recent publication are available. Treatises necessary for advanced work or research work will be obtained to meet the particular needs of students pursuing such work.

SPECIAL REQUIREMENTS FOR HIGHER DEGREES.

The Degree of Doctor of Philosophy.

A. Chemistry as the Major Subject.—For general requirements see p. 21. All candidates who make chemistry their major subject must offer the following courses, or their equivalents: 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12, 13. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the following courses in accordance with their choice, before receiving the degree:

(a) *Inorganic Chemistry*: 10b, 11b, 21 (one semester); 17 (one semester); and ten credit hours elected from Courses 14, 15a, 16a, 20, 24, 34, 35b.

(b) *Organic Chemistry*: 20, 21, 35b, 17 (one semester); and ten credit hours elected from Courses 10b, 11b, 14, 18b, 24, 34.

(c) *Physical Chemistry*: 10b, 20, 34, 17 (one semester); and ten credit hours elected from Courses 14, 19a, 11b, 21, 24, 35b.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the head of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12 and 13 (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree.

Concerning the general requirements, see p. 21. The Department of Chemistry requires that at least sixteen (16) of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail upon a subject suggested by the instructor under whose direction the student has been placed.

FOR UNDERGRADUATES AND GRADUATES.

19b. Advanced Inorganic Chemistry.—Three exercises a week during the second semester. In this course the less familiar elements and compounds and the more recent theories of inorganic chemistry are discussed. T., Th., S., 8:30-9:30.

Professor Jones.

Prerequisite: Courses 5a, 6, and 7b.

11b. Inorganic Preparations.—Three laboratory exercises a week during the second semester. Preparation of specimens of inorganic compounds. M., W., F., 1:00-4:00.

Professor Jones.

Prerequisite· Course 7b.

20. Advanced Organic Chemistry.—Lectures, embracing a systematic study of the principles and practice of organic chemistry, and treating of the modes of formation, properties, reactions, and constitution of typical members of the most important classes of organic compounds. T., Th., S., 9:30-10:30.

Professor Jones.

Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. M., W., F., 1:00-4:00. Professor Jones.

Prerequisite: As in Course 20.

24. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter from the earliest times to the present, and considers the development of the fundamental laws of the science of chemistry. Special attention will be directed to the classical memoirs of the Greek Philosophers, the tenets of the Alchemists, and those researches of the past century that have developed the Atomic and Structure Theories of modern chemistry. Lectures, collateral readings and papers. T., 4:00-5:00; S., 8:30-9:30.

Assistant Professor Fry.

Prerequisite: 5a, 6, 8a and 9a, or 20 and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric spark) and absorption spectra of inorganic and some organic substances will be studied from the chemist's point of view. Two periods a week. Hours to be arranged.

Professor Jones.

Prerequisite: 5a, 6, 8a, 9a; Physics, 1 year.

PRIMARILY FOR GRADUATES.

30. **Research in Organic Chemistry.**—Eight or more laboratory periods a week, with collateral reading and practice in bibliography. The nature of the research will be determined by the special training and the inclination of the student.

Professor Jones and Assistant Professor Fry.

31. **Research in Technical Chemistry.**—Eight or more laboratory periods a week, devoted to the solution of some problem in industrial chemistry, with collateral reading and practice in bibliography. The nature of the research will depend upon the special training and the inclination of the student.

Assistant Professor Porter.

32. **Research in Physical Chemistry.**—This course will consist of laboratory work and a systematic course of reading along the special line of the investigation. Ample provision will be made for apparatus necessary to facilitate the work. Hours to be arranged with the instructor.

Professor Jones and Mr. Farnau.

33. **Research in Inorganic Chemistry.**—This course is intended for students who are desirous of investigating some particular problem in inorganic chemistry. It will comprise laboratory work and collateral reading. Hours to be arranged with the instructor. Professor Jones.

34. **Mathematical Chemistry.**—A study of the application of exact and approximate mathematics in physical science. Two periods a week. Hours to be arranged. Mr. Farnau.

Prerequisite: Chemistry 12, 13; Math. 8a, 9b.

35b. **Some Special Problems and Theories of Organic Chemistry.**—A critical discussion of the working hypotheses, and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases will be presented in detail. Topics for consideration will be chosen from the following: optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpines; tautomerism; the polypeptides, proteins, etc. Two hours a week, *second semester*, M., F., 11:30-12:30. Professor Jones.

40. **Journal Club Meetings.**—Instructors and advanced students of the department will present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings will be held fortnightly, and will last one hour. Subjects to be discussed will be announced one week in advance.

ECONOMICS.

(The Sinton Professorship.)

Professor Hicks.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a, **Theory of Economics**, and 2b, **Economic History**, are prerequisite to certain advanced courses given below.

3a. The State and Industries.—A study of the relation of the State to industrial activity, including a consideration of collectivism and individualism. Attention will be given also to the question of public and private ownership of municipal monopolies. T., Th., 3:00-4:00, *first semester.* Professor Hicks.

Course 3a is open to students who have passed in Courses 1a and 2b. Omitted in 1908-09; given in 1909-10.

4b. Labor.—In this course the existing labor situation is analyzed, special attention being given to labor legislation, organization of laborers and employers, strikes, lockouts, injunctions and arbitration. T., Th., 3:00-4:00, *second semester.* Professor Hicks.

Course 4b is open to students who have passed in Courses 1a and 2b. Omitted in 1908-09; given in 1909-10.

5a. The Tariff.—A description of the tariff policy of the United States and its relation to existing industrial conditions, with an analysis of the arguments for and against protection. M., W., F., 3:00-4:00, *first semester.* Professor Hicks.

Course 5a is open to students who have passed in Courses 1a and 2b. Given in 1908-09; omitted in 1909-10.

6b. Money.—The essentials of an efficient monetary system; the problem of standard money, bimetallism *vs.* monometallism; credit money, government and bank issues; the present needs in the United States. M., W., F., 3:00-4:00, *second semester.* Professor Hicks.

Course 6b is open to students who have passed in Courses 1a and 2b. Given in 1908-09; omitted in 1909-10.

7a. Trusts.—The causes and effects of trusts; anti-trust legislation, its character and results; proposed remedies for trust evils; the relation of the trust question to the corporation problem. M., W., F., 3:00-4:00, *first semester.* Professor Hicks.

Course 7a is open to students who have passed in Courses 1a and 2b. Omitted in 1908-09; given in 1909-10.

8b. Transportation.—This course is devoted principally to a study of the railroad problem. It includes the theory and practice of rate-making, the evils of excessive and discriminating rates, government ownership of railroads, and public control through commissions and general legislation. M., W., F., 3:00-4:00, *second semester.* Professor Hicks.

Course 8b is open to students who have passed in Courses 1a and 2b. Omitted in 1908-09; given in 1909-10.

9a. Theory of Finance.—The fundamental principles of public finance, with especial reference to taxation. T., Th., 3:00-4:00, *first semester.* Professor Hicks.

Course 9a is open to students who have passed in Course 1a. Given in 1908-09; omitted in 1909-10.

10b. History of Public Finance.—After a brief survey of the general development of financial systems, the history of public finance in the United States will be taken up and a comparison made with the revenue systems of the leading European nations. T., Th., 3:00-4:00, *second semester.* Professor Hicks.

Course 10b is open to students who have passed in Course 9a. Given in 1908-09; omitted in 1909-10.

PRIMARILY FOR GRADUATES.

12. Seminary.—This course is intended to afford opportunity for the detailed study of special problems in economics and finance. Credit according to work done. M., 4:00.

Professor Hicks.

EDUCATION.

Professor Burris, Professor Hall, Assistant Professor Ballou.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **History and Principles of Education,** is prerequisite to certain advanced courses in Education, as shown below.

Education 3a. Historical and Comparative Study of Secondary Education.—The course deals with the secondary schools in Germany, France, England, and the United States. Intended for those who are preparing for positions in secondary schools. Open to seniors, graduates, and teachers after consultation with the Dean of the College for Teachers. *First semester.* T., Th., 3:00-4:00. Assistant Professor Ballou.

Education 1 is prerequisite to Education 3a.

Education 3b. Principles of Secondary Education.—A critical consideration of the principles and problems of American secondary education. *Second semester.* T., Th., 3:00-4:00.

Assistant Professor Ballou.

Education 1 and 3a are prerequisite to Education 3b.

PRIMARILY FOR GRADUATES.

Education 5. Philosophy of Education.—Lectures, required readings, and discussions. The first part of the course will present an integrated view of the facts of the various sciences having educational significance, for the purpose of arriving at a philosophical definition of education as a whole. The second part of the course will deal with the organization of elementary education as determined by its philosophical meaning thus derived, and as modified by practical considerations. In appropriate connections there will be special consideration of the process of education as world building. The historical and logical origin, meaning, and classification of studies will be briefly considered. Special attention will be given to the question, what happens when we try to know, and to the place of symbolism and systems of imitational and inventional expression in education. Credit will be given only to those who take the course throughout the year. This course will be repeated for principals of schools at a time and place agreed upon if a sufficient number register for the course. S., 8:30-9:30.

Professor Burris.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. Credit according to amount of work done. M., 4:00-6:00.

Professor Burris.

Education 12. Seminar.—Investigations and reports on special problems in method and curricula in the elementary school.

For graduates and for qualified teachers. Credit according to work done. W., 4:00-6:00. Professor Hall.

Education 17. Educational Classics.—This is an advanced course in the History of Education and presupposes Education 1 or its equivalent. From year to year it will consist of a critical study of the more important writings of "Great Educators" of special periods. For the year 1908-09 the period covered will be from the Renaissance to the naturalistic movement of the eighteenth century. W., 4:00-6:00.

Professor Burris.

ENGLISH.

Professor Krapp, *Associate Professor Miller, Miss Czarnomska, Assistant Professor McVea, Miss Merrill.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1, **Rhetoric and English Composition**, 2, **English Composition**, and 3, **Modern English Poetry**, are prerequisite to certain advanced courses in English, as shown below.

After 1908-09 Courses 4, 5, 18, 6, 16, will not be counted for the graduate degrees.

4. English Prose Literature.—A study of selected works of the chief prose writers of the last four centuries. Essays, discussions, reports of reading. T., Th., 11:30-12:30, throughout the year. Assistant Professor McVea.

Course 4 is open to students who have passed in Courses 1, 2, and 3.

5. Shakespeare and Contemporary Dramatists.—*Romeo and Juliet, A Midsummer Night's Dream, Hamlet, King Lear, The Tempest.* Private reading of the remaining plays. Selected plays by Ben Jonson, Beaumont and Fletcher, Dekker, Webster and others. Lectures, reports, discussions. M., W., F., 9:30-10:30, throughout the year. Professor Krapp.

Course 5 is open to students who have passed in Courses 1 and 3.

14. The History of the English Drama to 1593.—Folk dramatic material, miracle-plays, moralities, interludes. Comedy and tragedy before Shakespeare. Special study of Marlowe and the chronicle-history. Lectures, reports, discussions. M., W., F., 11:30-12:30, throughout the year. Miss Czarnomska.

Course 14 is open to students who have passed in Courses 1 and 3.

18. American Literature.—Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, and some of their contemporaries. T., Th., 1:00-2:00, throughout the year.

Assistant Professor McVea.

Course 18 is open to students who have passed in Courses 1 and 3.

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*Absent on leave, 1908-09.

6. Victorian Poets.—Tennyson, Browning, Arnold, and Rossetti. Study of selected poems and dramas, together with as wide reading as possible in the works of these poets and of contemporary poets. Reports, essays and discussions. M., W., 11:30-12:30, throughout the year. Miss Czarnomska.

Course 6 is open to undergraduates who have passed in Courses 1, 3 and 5, and have shown aptitude for literary study. Graduates must show satisfactory preparation.

16. Early Nineteenth Century Poets.—Wordsworth, Byron, Shelley, Keats, and some of their contemporaries. W., F., 10:30-11:30, throughout the year. Associate Professor Miller.

The requirements for admission are the same as for Course 6.

Omitted in 1908-09.

17a. Literary Criticism.—An examination of the theories and opinions concerning poetry and the drama of some of the greater critics, from Dryden to Matthew Arnold. Discussions, reports. T., Th., 1:00-2:00, *first semester.*

Associate Professor Miller.

The requirements for admission are the same as for Course 6.

Omitted in 1908-09.

19b. The English and Scottish Popular Ballads.—A study of the characteristics of folk-poetry. The origin and development of the popular ballad. Lectures, reading, and discussion of selected ballads, comparative study of ballads, reports of reading, essays. T., Th., 1:00-2:00, *second semester.*

Associate Professor Miller.

Course 19b is open to students who have passed in Courses 1 and 3. Omitted in 1908-09.

7a. Old English.—An elementary course in Old English (Bright's *Anglo-Saxon Reader*). M., W., F., 8:30-9:30, *first semester.* Miss Merrill.

PRIMARILY FOR GRADUATES.

8b. Old English Poetry.—*Beowulf* or other selected poems. Reading in the history of Old English poetry. M., W., F., 8:30-9:30, *second semester.* Professor Krapp.

Course 8b is open to students who have passed in Course 7a.

9. Middle English Poetry.—Selected poems from earlier Middle English poetry (1150-1350) in the first semester; Chaucer in the second semester. Reading in the history of Middle English literature. Study of changes in English pronunciation and grammar from 1100 to 1500. T., Th., 8:30-9:30, throughout the year.

Professor Krapp.

Course 9 is open to students who have passed in or are taking Course 7a. Students who choose English as a major subject must take Courses 7a and either 8b or 9.

FOR GRADUATES ONLY.

20. English Seminary.—Study of special topics in English language and literature. Credit according to work done. Hours to be arranged. Professor Krapp.

GEOLOGY AND GEOGRAPHY.

Professor Fenneman.

LABORATORIES.

The Department of Geology and Geography occupies the fourth floor of McMicken Hall, except a part of the room used as a museum of zoology and geology. A general laboratory is used for work with maps and fossils and for work with hand specimens of rocks and minerals, with only such apparatus and reagents as may be carried in the field. A laboratory for determinative mineralogy and another for microscopic petrography are at present being fitted up with appliances of the most modern and approved type.

A seminar room contains the departmental library and all reference maps, topographic, geologic, and geographic, belonging to the department. Graduate students may be allowed private desks in the petrographic library, which communicates with the seminar room. A lecture room, seating thirty-six students, is equipped with a stereopticon of the highest grade and with the customary models and illustrative material.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 2, **General Geology**, is prerequisite to Courses 4a and 5b, as shown below.

4a. Technical Physiography and Hydrography.—More advanced and specialized than Course 1 (Physiography), and includes a thorough study of ground waters. Designed for those who have had General Geology and who contemplate advanced study or practical work in Geology. *First semester.* Three hours a week, to be arranged. Professor Fenneman.

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit type-written reports and topographic and geologic maps. This course may be taken in connection with the second half of Course 2. *Second semester.* Three hours a week, to be arranged. Professor Fenneman.

6a. Crystallography.—First half semester; a study of geometrical forms with laboratory study of crystal models; second half semester, optical principles with microscopic examination of crystals cut in definite orientation. A reading knowledge of German is an advantage but not a necessity to students in this course. *First semester*, T., Th., S., 9:30-10:30. Professor Fenneman.

***7b. Mineralogy.**—System of classification of minerals; examination and descriptive study of specimens of all the more important species; sight recognition, so far as possible, of the commoner rock-making and economic minerals; determinative mineralogy and blow-pipe analysis. This course is intended to follow Course 6a, which is prerequisite. *Second semester*, T., Th., S., 9:30-10:30. Professor Fenneman.

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*Course 2 is not prerequisite to Courses 6a and 7b, but these are not accepted as graduate courses for students making Geology a major, unless Course 2 or its equivalent has been taken.

GERMAN.

Professor Poll, Assistant Professor Lotspeich.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 4, **Introduction to German Literature of the Eighteenth Century**, is prerequisite to certain advanced courses as shown below.

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following will be read in 1908-09. *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 10:30-11:30. Professor Poll.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. T., 4:00-6:00. Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30. Professor Poll.

Omitted in 1908-09.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30. Professor Poll.

PRIMARILY FOR GRADUATES.

12. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. Th., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.
Omitted in 1908-09.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. Th., 4:00-6:00. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

7. Middle High-German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. W., 4:00-6:00. Assistant Professor Lotspeich.

8. Old High-German.—Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as text-books. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. F., 4:00-6:00. Assistant Professor Lotspeich.

13. Gothic.—Braune's *Gotische Grammatik;* reading of selections from the Ulfilas; lectures on Germanic philology. M., 4:00-6:00. Assistant Professor Lotspeich

26. **Old Norse.**—Kahle's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. F., 4:00-6:00.
Assistant Professor Lotspeich.

Omitted in 1908-09.

9. **German Seminary.**—Critical study of Goethe's *Faust* (both parts). M., W., 9:30-10:30. Professor Poll.

GREEK.

Professor Harry.

Many casts of works of antique art have been installed in the Greek room and in the corridors of the University. Students in both undergraduate and graduate courses have also opportunities to study the casts in the Cincinnati Art Museum.

PRIMARILY FOR GRADUATES.

5. **The Lyric Poets and Lucian.**—W., 2:00-3:00.
Professor Harry.

6. **Practical Exercises in Greek.**—Th., F., 2:00-3:00.
Professor Harry.

7. **Greek Seminary.**—Aristophanes (1908-09); The Attic Orators (1909-10). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY.

Professor Whitcomb, Assistant Professor Cox, Mr. Dilworth.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 3, **Reformation.-Revolution.-Napoleon.-**; Course 13, **History of England**; Course 30, **American History to 1783**; and Course 31, **American History from 1783 to 1861**, are prerequisite to certain advanced courses in History, as shown below.

25. **European History Since 1814.**—An advanced course dealing with the problems of contemporary European history. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization. T., Th., 10:30-11:30.
Professor Whitcomb.

Course 25 is open to students who have passed in Course 3.

40. **English Constitutional History.**—The course will trace the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. M., W., F., 1:00-2:00.
Mr. Dilworth.

21. **American Constitutional History.**—The course will treat of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. T., 1:00-2:00; Th., 1:00-3:00. Assistant Professor Cox.

Open to those who have had Course 13 or 30.

15. **The Sectional Struggle and National Expansion.**—The course deals with recent American History from the Compromise of 1850 to the present time, and includes a survey of the causes of the Civil War; a review of the main features of that great sectional conflict; the Reconstruction Period; and recent industrial and territorial expansion. T., 1:00-2:00; Th., 1:00-3:00.

Assistant Professor Cox.

Open to those who have had Course 30 or 31.

Omitted in 1908-09.

20. **The United States and Spanish America.**—A study of typical Spanish colonial institutions, to be followed by a review of the relations of the United States with some portion of Spanish America. The field of intensive study will vary, so as to permit a detailed review of questions of present interest. A reading knowledge of Spanish is desirable. M., W., F., 8:30-9:30.

Assistant Professor Cox.

Open to those who have had Course 30 or 31.

Omitted in 1908-09.

38. **American Territorial Diplomacy.**—The course will review the claims of various European nations to the American continent, to be followed by a detailed study of the diplomatic and frontier questions involved in the territorial expansion of the United States. M., W., F., 8:30-9:30.

Assistant Professor Cox.

Open to those who have had Course 30 or 31.

35. **History of the Old Northwest.**—A lecture course devoted to the salient features of French, English, and American colonial policy in this section, followed by a review of its economic and political development to the Civil War. Open to advanced students and teachers. S., 9:30-10:30.

Assistant Professor Cox.

PRIMARILY FOR GRADUATES.

34. **Seminary in European History.**—The Period of Napoleon Bonaparte. Members of the seminary will take up special problems in the career of Napoleon and work them out with the aid of source material. This will require a general knowledge of European history from 1789 to 1815, such as is afforded in Course 3, and also an ability to read French historical prose. Two hours a week; period to be arranged. Professor Whitcomb.

39. **Seminary in American History.**—Politics and Political Leaders of the Ohio Valley. The course will be devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. Two hours per week; period to be arranged.

Assistant Professor Cox.

41. **Seminary in English History.**—Students wishing to take this course should consult with the instructor. Two hours per week; period to be arranged. Mr. Dilworth.

LATIN.

Professor Burnam, *Assistant Professor Allen, Acting Assistant Professor Rea.

The work, while not neglecting the philological side of the subject, will emphasize its historical and humanitarian aspect. The University Library has the beginning of a fair special collection, chiefly devoted to the authors most read in the course. The students in Palaeography will find some MSS. and a considerable collection of facsimiles and treatises at their disposal.

PRIMARILY FOR GRADUATES.

Hours in all cases to be arranged.

9. **Latin and Romance Palaeography.**—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century, including an account of books, their makers, materials, etc., in ancient and mediaeval times. Students will have abundant practice in reading facsimiles. Three hours.
Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires a reading knowledge of French and German.

10. **Latin Seminary.**—Three hours. Author studied in 1908-09 is Cicero. Professor Burnam.

11. **Roman Religion.**—Students must provide themselves with G. Wissowa's *Religion und Kultus der Roemer*, Muenchen, 1902. Two hours. Professor Burnam.

12. **Graduate Study.**—Credit according to work done.
Professor Burnam and Acting Assistant Professor Rea.

21. **Sanskrit.**—A three-hour elementary course.
Professor Burnam.

† MATHEMATICS.

Professor Hancock, Professor Slocum, Mr. Moore.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 5, **Calculus, Differential and Integral**, is prerequisite to certain advanced courses, as shown below.

6a. **Advanced Analytical Geometry of Two Dimensions.**—C. Smith, *Conic Sections*. Lectures. T., Th., S., 11:30-12:30, *first semester*. Mr. Moore.

Course 6a is open to graduate students and to those who have passed in Course 5.

Omitted in 1908-09.

7b. **Analytical Geometry of Three Dimensions.**—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry*. Lectures, T., Th., S., 11:30-12:30, *second semester*. Mr. Moore.

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*Absent on leave, 1908-09.

† See courses in Applied Mathematics, College of Engineering.

Course 7b is open to graduate students and to those who have passed in Course 5.

Omitted in 1908-09.

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 10:30-11:30. Mr. Moore.

Omitted in 1908-09.

8a. Advanced Integral Calculus.—Elliptic Integrals. Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*
Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*
Professor Hancock.

PRIMARILY FOR GRADUATES.

24. Elliptic Integrals and Elliptic Functions.—The theories of Legendre, Abel, Jacobi, and of Riemann, Hermite, Weierstrass. Lectures founded on the Berlin Lectures of Fuchs, Schwarz and Weierstrass. T., 4:00-6:00; S., 10:30-12:30.
Professor Hancock.

16a. Theoretical Mechanics.—A modern treatment of analytical mechanics intended especially for advanced students in engineering and physics. The course will be given by lectures, supplemented by references to standard texts. Th., 4:00-5:00; S., 8:30-10:30, *first semester.* Professor Slocum.

16b. The Mathematical Theory of Elasticity.—A course in the mechanics of elastic bodies, supplementary to Course 16a. The course will be given mainly by lectures, but the works of Williamson and of A. E. H. Love will be used as references. Th., 4:00-5:00; S., 8:30-10:30, *second semester.* Professor Slocum.

28. Theory of Functions.—Hours to be arranged.
Mr. Moore.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. W., 4:00-6:00; S., 8:30-9:30, *first semester.*
Professor Slocum.

Omitted in 1908-09.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's and Lame's functions, with applications to problems in heat, electricity, potential, elasticity, etc. W., 4:00-6:00; S., 8:30-9:30, *second semester.*
Professor Slocum.

Omitted in 1908-09.

26a. The History and Teaching of Mathematics.—A course in the pedagogy of mathematics, based chiefly on the historical development of the subject. Modern pedagogical theories will be

studied in their relation to mathematics and used as a basis for the discussion of laboratory and other special methods of instruction. *First semester*, Th., 4:00-6:00; S., 9:30-10:30.
Professor Slocum.

Omitted in 1908-09.

25. Application of Elliptic Functions.—The general theory of Course 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1908-09.

21. Theory of Functions, Continued.—An advanced course, including the Hyperelliptic and Abelian Functions. Lectures. S., 9:30-11:30. Mr. Moore.

Omitted in 1908-09.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.—Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1908-09.

18a. Theory of Minimal Surfaces.—The developments of Lie, Darboux, Schwarz, and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester.*

Omitted in 1908-09. Professor Hancock.

19b. The Extended Realms of Rationality.—Lectures. T., Th., S., 8:30-9:30, *second semester.* Professor Hancock.

Omitted in 1908-09.

PHILOSOPHY.

Professor Bawden.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a and 2b, **Introduction to Philosophy**, are prerequisite to certain advanced courses in Philosophy, as shown below.

3a. History of Philosophy.—A study of the early Greek Nature-philosophers; the great ethical thinkers, Socrates, Plato, Aristotle; the Stoics and Alexandrian School; Mediaeval philosophy to Scholasticism. *First semester*, M., W., F., 9:30-10:30.
Professor Bawden.

4b. History of Philosophy, Continued.—Modern philosophy, beginning with Bacon and Descartes, and following the development of thought in England and on the Continent through Kant and the modern idealists. The course will conclude with a brief exposition of the salient features of the various schools influential at the present time. *Second semester*, M., W., F., 9:30-10:30.
Professor Bawden.

14. Educational Ethics.—A consideration of the ethical problems underlying certain types of social adjustment in their bearing on both society and the individual. Especial attention will

be paid to the ethical meaning of the educative process. Throughout the year. S., one hour, to be arranged.

Professor Bawden.

PRIMARILY FOR GRADUATES.

5a. Logic-Epistemology.—A study of the nature of knowledge on the basis of an examination of its psychological, epistemological and metaphysical grounds and implications. Its aim—from a consideration of the methods of practical and scientific reasoning, to arrive at a just estimate of the conditions and tests of valid thinking. Seminar. *First semester*, T., 11:30-1:30.

Professor Bawden.

Course 5a is open to those who have had Courses 1a, 2b, 3a, and 4b, or their equivalents.

Omitted in 1908-09.

6b. Epistemology-Metaphysics.—The application of the principles worked out in Course 5a to the ultimate problems of being and knowing, with especial attention to the fundamental antinomies with which modern thought has been concerned. Seminar. *Second semester*, T., 11:30-1:30. Professor Bawden.

Omitted in 1908-09.

7a. Theory of Values.—Practical, logical, ethical, social, religious, aesthetic. The aim is to show the place of so-called spiritual values in human experience and upon this as a basis to work out the mutual relations of the distinctive value categories in the realms of art, religion, and ethics. Seminar. *First semester*. Hours to be arranged.

Professor Bawden.

Omitted in 1908-09.

8b. Theory of Values, Continued.—Seminar. *Second semester*. Hours to be arranged. Professor Bawden.

Omitted in 1908-09.

12a. Principles of Science.—An examination of the fundamental concepts and presuppositions of scientific method with a view to working out a general methodology of experience. Especial attention will be devoted to analysis of the concepts of Space, Time, Causation, Evolution, Uniformity of Nature, Conservation of Energy, Mind and Matter, Energy, and the Value categories, with the aim of showing the psychological, epistemological, and metaphysical implications of the procedure of science in comparison with the techniques underlying industry, art, and the ethico-religious life. Seminar. *First semester*. Hours to be arranged. Professor Bawden.

13b. Principles of Science, Continued.—Seminar. *Second semester*. Hours to be arranged. Professor Bawden.

PHYSICS.

Professor More, Assistant Professor Ives, Dr. Allen, Dr. Carter.

The Department of Physics occupies the first floor and the larger part of the basement of Cunningham Hall. The former contains lecture and recitation rooms, offices, library and general laboratories. In the basement are the shops and a number of small rooms fitted for advanced work.

The department is supplied with modern apparatus for illustrating lectures, and for both general and advanced laboratory work The stock is also being largely increased. A skilled mechanician is employed in making and repairing apparatus. Every facility will be offered students requiring specially constructed apparatus.

The library of the department contains the best works in Physics, and the important journals are on file.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Courses 1a and 21b, **General Physics**, 2a and 22b, **Experimental Physics**, and Mathematics 5, **Calculus, Differential and Integral**, are prerequisite to certain advanced courses in Physics, as shown below.

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester*, M., W., F., 10:30-11:30. Dr. Carter.

Omitted in 1908-09.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester*, M., W., F., 10:30-11:30. Dr. Carter.

Omitted in 1908-09.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester*, M., W., F., 10:30-11:30. Dr. Carter.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester*, M., W., F., 10:30-11:30. Assistant Professor Ives.

Physics 1a, 21b, 2a, 22b, and Calculus (Math. 5) are prerequisites for Courses 3a, 18b, 19a. and 15b.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Three times weekly. Assistant Professor Ives.

10. Seminary.—The reading and discussion of papers in physical journals. M., 4:00-5:00. Professor More.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester*, T., Th., 4:00-5:00. Professor More.

17a. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *First semester*. Twice weekly. Assistant Professor Ives.

FOR GRADUATES ONLY.

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. For 1908-09, the lectures will discuss the theory of light; 1909-10, electricity and magnetism; 1910-11, heat. T., Th., 10:30-11:30. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course will be supplied with all the apparatus needed, and the assistance of the Mechanician will be at their disposal. Daily.
Professor More, Assistant Professor Ives, and Dr. Allen.

POLITICAL AND SOCIAL SCIENCE.

Professor Brooks.

FOR UNDERGRADUATES AND GRADUATES.

3. History of Political Ideas.—A study of the development of political thought. The first part of the course will be devoted to a series of lectures on Oriental, Greek, Roman, and mediaeval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date will be studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times will receive attention. Upon the conclusion of the historical work of this course one or two special problems of political philosophy will be discussed in detail. For 1908-09 the topics will be the nature of political corruption and the problem of reform in its more general aspects. M., W., F., 2:00-3:00.
Professor Brooks.

Course 3 is open for the present to graduate students and to undergraduates whose preparation is satisfactory to the head of the department.

7. Modern Social Theories.—A study of the social theories of Comte, Mill, Spencer, Schaeffle, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, and others. Particular attention will be given to the consequences of the theories of these writers in the field of practical social reform. T., Th., 4:00-5:00.
Professor Brooks.

Course 7 is open for the present to graduate students and to undergraduates whose preparation is satisfactory to the head of the department.

PSYCHOLOGY.

Professor Breese.

The department occupies two rooms on the second floor of McMicken Hall. One of these rooms is devoted to the laboratory, which is equipped with the apparatus necessary for carrying out the typical experiments in general psychology. The aim of the courses in this department is to give a comprehensive account of the facts of mental life and the methods of investigating them, and to point out the stages of mental development in the race and in the individual. For teachers and those intending to teach there are offered special courses dealing particularly with mental development and the application to education.

FOR UNDERGRADUATES AND GRADUATES.

2. Experimental Psychology.—Laboratory course. M., W., F., 1:00-3:30. Professor Breese and Mr. Lurie.

6a. Educational Psychology.—The applications of psychology to education. *First semester.* M., W., F., 3:00-4:00.
Professor Breese.

PRIMARILY FOR GRADUATES.

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged.
Professor Breese.

ROMANCE LANGUAGES.

Professor Liberma, Assistant Professor Umphrey.

Undergraduate Course 4, **French Literature in the Seventeenth Century**, Course 6, **Elementary Spanish**, and Course 7, **Elementary Italian**, are prerequisite to certain advanced courses in Romance Languages, as shown below.

FOR UNDERGRADUATES AND GRADUATES.

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Cervantes, *Don Quijote;* selected plays of Lope de Vega and Calderón. History of Spanish Literature from the age of Juan II. to the Bourbons. T., Th., 10:30-11:30.
Assistant Professor Umphrey.

Course 8 is open to students who have passed in Course 6.

29. The Renaissance in Italy.—Precursors of the movement. Petrarca, life, writings, and influence. *Le Rime* (Sansoni edition); *Le Lettere* (Le Monnier, Florence). Boccaccio, *Novelle scelte del Decamerone* (Sansoni edition); selections from his *opere minori* (Sansoni edition). T., Th., 9:30-10:30.
Assistant Professor Umphrey.

Course 29 is open to students who have passed in Course 7.

10. Historical French Grammar.—A study of the successive changes the French language has undergone in pronunciation, inflection, and syntax. Hand-book: Brunot, *Precis historique de la Grammaire francaise.* T., Th., 10:30-11:30.
Professor Liberma.

Course 10 is open to students who have passed in Course 4.

13. French Literature in the Eighteenth Century.—Montesquieu, Voltaire, Diderot, J. J. Rousseau. Reading of selected works, lectures, reports. This course is given wholly in French. T., Th., 9:30-10:30. Professor Liberma.

Course 13 is open to students who have completed Course 4.

23. French Literature of the Renaissance.—A study of the more important writers of the period. Lectures and reports. T., Th., 8:30-9:30. Professor Liberma.

Course 23 is open to students who have had Course 4.

24. Special Studies in Modern French Literature.—Jean Jacques Rousseau. A study of his life, writings, and influence. T., 4:00-6:00. Assistant Professor Umphrey.

Course 24 is open to students who have passed in Course 4.

25a. **Phonetics.**—A general introduction to linguistic science, intended to furnish a basis for the study of philology and for the practical teaching of modern languages. A systematic description of the organs of speech, followed by an examination of the most important sounds in three or four modern languages, especially English, French, and German. A phonetic alphabet will be used, and students will be given practice in phonetic transcription. Half course, *first semester.* T., 2:00-4:00.

Assistant Professor Umphrey.

25b. **Historical French Phonetics.**—Text-books: *Precis Historique de phonetique francaise, Chrestomathie du Moyen Age,* Paris et Langlois. Half course, *second semester.* T., 2:00-4:00.

Assistant Professor Umphrey.

PRIMARILY FOR GRADUATES.

12. **Old French.**—Old French phonology and inflections; versification. Lectures, text interpretation, and collateral reading. M., W., 2:00-3:00. Professor Liberma.

Course 12 is open to students who have passed in Course 4.

17. **Seminary.**—Studies in the French Renaissance. The sonnet-series in the works of the Pleiade Two credits. Hours to be arranged. (The class will hold its first three meetings on W., 4:00-6:00). Professor Liberma.

18. **Latin and Romance Palaeography.**—See under "Latin."

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS.

University of Cincinnati Record

Series I, Vol. V., No. 4. JANUARY, 1909.

ANNOUNCEMENT OF

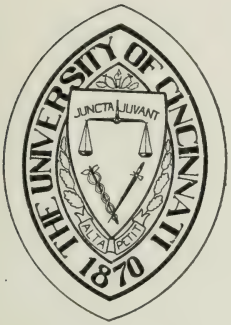
THE GRADUATE SCHOOL

1909–1910

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
AT THE UNIVERSITY PRESS,
BURNET WOODS, CINCINNATI, OHIO

Series I. Vol. V. No. 4
JANUARY, 1909

University of Cincinnati Record



ANNOUNCEMENT OF

THE GRADUATE SCHOOL

1909–1910

ISSUED MONTHLY

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
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THE UNIVERSITY OF CINCINNATI

COMPRISES THE FOLLOWING DEPARTMENTS:

I.
THE GRADUATE SCHOOL.

II.
THE McMICKEN COLLEGE OF LIBERAL ARTS.

III.
THE COLLEGE FOR TEACHERS.

IV.
THE COLLEGE OF ENGINEERING.
(Mechanical, Electrical, Civil,
and Chemical Engineering.

V.
THE COLLEGE OF LAW.
(The Cincinnati Law School.)

VI.
THE OHIO-MIAMI MEDICAL COLLEGE OF THE
UNIVERSITY OF CINCINNATI.
(The Ohio and the Miami Medical Colleges have unite

VII.
THE DEPARTMENT OF CLINICAL MEDICINE.
(The Clinical and Pathological School
of the Cincinnati Hospital, Affiliate

For the special announcements of the various departme
and further information, address:

The Secretary, University of Cincinnati,
CINCINNATI, OHIC

OFFICERS OF ADMINISTRATION OF THE GRADUATE SCHOOL.

President of the University:
HARLES WILLIAM DABNEY, Ph. D., LL. D. Room No. 10, McMicken Hall.

Dean of the Graduate School:
OSEPH E. HARRY, Ph. D. Room No. 4, McMicken Hall.

Director of the Observatory:
ERMAIN G. PORTER, Ph. D. The Observatory, Mt. Lookout.

Clerk of the Board of Directors:
ANIEL LAURENCE, B. S. Room No. 6, McMicken Hall.

Secretary of the University:
..... Room No. 10, McMicken Hall.

Librarian of the University:
ARLES ALBERT READ, A. B. Van Wormer Library Building.

Registrar:
LIA AMANDA GARVIN, B. L. Room No. 7, McMicken Hall.

THE GRADUATE SCHOOL.

Calendar 1909–1910.

September 27, Monday:

First semester begins.

Sept. 27, Monday–Oct. 2, Saturday:

Registration days.

Nov. 25, Thursday–Nov. 27, Saturday:

Thanksgiving recess.

December 23, Thursday:

Christmas vacation begins.

January 3, Monday:

Work resumed.

Jan. 24, Monday–Jan. 29, Saturday:

First semester examinations.

January 29, Saturday:

First semester ends.

Jan. 31, Monday–Feb. 2, Wednesday:

Registration days for second semester.

February 1, Tuesday:

Second semester begins.

GENERAL INFORMATION.

FOUNDATION.

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869 the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874 the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin Street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long

inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati.

New departments were also added. In 1872 the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896 the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908 an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, to be known as "The Ohio-Miami Medical College of the University of Cincinnati." In 1896 a Law Department was established, and six professors of law were appointed, who gave instruction at first in rooms on Fourth Street. But, in 1897, by a contract with the Law School of the Cincinnati College (founded in 1833), a union was effected. The College of Law of the University was to be known as the Cincinnati Law School, and the degree of Bachelor of Laws was to be conferred by the concurrent action of the Board of Directors of the University and the Trustees of the Cincinnati College.

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in cooperation with the Board of Education of the City of Cincinnati. In 1906

*For this purpose the city levies annually a special tax of one-twentieth of one mill.

the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University —five-tenths of a mill, instead of three-tenths as before.

BUILDINGS AND SITE.

From 1875 to 1895 the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96 the north wing, known as Hanna Hall, was built for the departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. Since 1896 the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. The College of Law, on Ninth Street, occupies a new building, which was completed in 1902 at a cost of $65,000.

BENEFACTORS OF THE UNIVERSITY.

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Procter, Rev. Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Judge Moses F. Wilson, Eugene F. Bliss, Dr. James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F.

Windisch, C. T. Webber, Rev. P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Charles Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, Professor Edward Miles Brown, the alumni of the University, and others.

ENDOWMENT FUND ASSOCIATION.

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS.

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

Form of Bequest to University of Cincinnati:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

Form of Bequest to the Endowment Fund Association:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

A gift of two hundred and fifty thousand dollars would be required to erect an Engineering building. Nothing could be of more service to the industries of Cincinnati and to the University.

One hundred thousand dollars would erect a fully equipped gymnasium building. This is another great need of the institution.

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any questions relating to foundations to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY.

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The rooms have been furnished by the University with heavy tables and desks of quartered oak.

The University Library, in this building, contains about 50,000 volumes and 8,800 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The Library is provided with a card catalogue of its own books, and also with card catalogues of the books in the Public Library of Cincinnati and in the Library of the Historical and Philosophical Society of Ohio. It is open every week day from 8 a. m. to 5 p. m.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was

made by Dr. Gustav Bruehl, and presented to the Library by Mr. Theodore A. Bruehl.

The Wilson Library, consisting mainly of works of literature and criticism, in English, French, and Italian, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Laura Seasongood Alcove contains books purchased annually from the proceeds of an endowment provided in 1894 by the will of the late Laura Seasongood.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown and presented to the University by Mrs. Edward Miles Brown, consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library will consist of French and German books, to be purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has deposited its valuable collections of books, pamphlets, and other articles in the Van Wormer Library of the University. This Library comprises over 22,000 volumes and 67,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts.

The total number of books in the Van Wormer Library Building is about 78,000 volumes and 76,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Law	11,000 volumes
The Library of the College of Medicine	3,000 volumes
The Library of the Cincinnati Hospital	18,309 volumes
Total	35,809 volumes

The libraries of the University then, taken altogether, but excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 85,809 volumes and 8,800 pamphlets.

The Public Library, of 418,976 volumes; the Mercantile Library, containing about 74,500 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum, and the College of Music, are open to University students.

UNIVERSITY PUBLICATIONS.

The University publishes the following periodicals at the University Press:

The University of Cincinnati Record,

Published monthly, from October to June. Its numbers include

The Annual Catalogue.
The Announcement of the Graduate School.
The Announcement of the McMicken College of Liberal Arts.
The Announcement of the College for Teachers.
The Announcement of the College of Engineering.
The Announcement of the College of Law.
The Announcement of the College of Medicine.
The President's Annual Report,

and other pamphlets of special information. Any number of the *Record* will be sent free of charge upon application to the Secretary of the University.

The University Studies,

Issued bi-monthly, is a scholarly publication, containing the results of research by members of the faculty or by other persons connected with the University of Cincinnati.

A price list of the literary and scientific publications of the University may be had by addressing the Office of the Press.

LABORATORIES.

The laboratory facilities offered in Botany, Zoology, Physiology, Histology, Physics, Chemistry, Psychology, Geology, and in the Engineering departments are equaled by few institutions in the West. The industries of the city afford abundant opportunity for the observation of the most recent scientific processes applied to manufacturing.

MUSEUMS.

The Museum of Natural History is located on the fourth floor of McMicken Hall, and consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds, and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics, and lastly, a series of specimens illustrating the chemical industries. Among recent valuable additions are the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch I. Carson; and several group mounts of large animals by the Custodian of the Museum. A skillful collector and taxidermist is at present engaged in completing collections of local material.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of Michel Angelo's "Twilight," the Praxitelean "Diana of Gabii," "Ajax," "Hector and Andromache," "Venus de Medici," "The Boy and Goose," "Psyche of Capua," and "Hero." Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, and Corinth in the same hall, form a valuable adjunct to the collection of casts in the Art room.

Students of the classics and of industrial art derive much profit from the collections of the Cincinnati Art Museum; the Museum of the Society of Natural History and the Zoological Garden are utilized extensively for practical instruction in biological science; the Indian remains and mounds near the city are important for the study of archæology and history. Courses in schools of music and fine art, for which Cincinnati is noted, are frequently combined with University work.

THE ALLIANCE FRANÇAISE.

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in cooperation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students

at the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of $300 in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

THE UNIVERSITY SETTLEMENT.

The Settlement conducted by the University of Cincinnati was organized in the year 1899. In May of that year a Settlement Association was formed, and in September a house, situated on Liberty and Plum Streets, in one of the most densely populated districts in Cincinnati, was opened, and at present is in full operation.

This house has become the social and educational headquarters of the neighborhood, and is frequented by the people from the surrounding tenement houses. A competent head-resident, ably seconded by his wife, directs the work. Various clubs are led by volunteer workers from the University and city and enjoy the social and educational privileges of the Settlement. Some of the features of the Settlement are a gymnasium, a circulating library, a reading room, a savings bank, and a lecture and entertainment course. It has, besides, a large sewing-school and several cooking-classes. Thus it furnishes an excellent experiment station for those who wish to do work in practical sociology.

This work is under the supervision of a Board of Directors, upon which serve representatives from the Faculty of the McMicken College of Liberal Arts, from the Alumnal Association, from the students of the University, and from business men of the city.

THE GRADUATE CLUB.

The members of the Graduate School have organized a Graduate Club, the object of which is to promote social intercourse, the encouragement of wider learning and research, the creation of an intellectual atmosphere, and the advancement of all the interests of the University of Cincinnati.

EXPENSES—BOARDING PLACES.

For the session of nine months the expenses of a student in the Graduate School will hardly be less than $325.00, nor need they be more, at a liberal estimate, than $450.00. A directory of

suitable boarding places in the vicinity of the University Campus may be found in the Secretary's office. The rates for board and lodging vary from $4.50 to $7.00 a week. A schedule of University fees, which vary in proportion to the amount of work elected, may be found on page 22 of this announcement.

The Secretary of the University will make every effort to secure employment in the city for students who desire to support themselves wholly or in part while attending the University.

GRADUATE SCHOOL.

FACULTY.

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Civics.

HARRIS HANCOCK, Ph. D., Dr. Sc., Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D., Professor of Latin.

*MAX POLL, Ph. D., Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.

MERRICK WHITCOMB, Ph. D., Professor of History.

LOUIS TRENCHARD MORE, Ph. D., Professor of Physics.

MICHAEL FREDERIC GUYER, Ph. D., Professor of Zoology.

BURTIS BURR BREESE, Ph. D., Professor of Psychology.

WILLIAM PAXTON BURRIS, A. M., Professor of the History and Principles of Education.

JOHN WILLIAM HALL, A. M., Professor of Elementary Education.

STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.

NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.

MARCO F. LIBERMA, A. B., Professor of Romance Languages.

LAUDER WILLIAM JONES, Ph. D., Professor of Chemistry.

ROBERT CLARKSON BROOKS, Ph. D., Professor of Political Science.

GEORGE PHILIP KRAPP, Ph. D., Professor of English.

GUY ALLAN TAWNEY, Ph. D., Professor of Philosophy.

THE ROPES PROFESSOR OF COMPARATIVE LITERATURE.

GEORGE MOREY MILLER, A. M., Associate Professor of English.

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*Absent on leave in Europe, 1909-10.

OTHER OFFICERS.

HARRIS MILLER BENEDICT, A. M., Associate Professor of Biology.

JAMES EDMUND IVES, Ph. D., Associate Professor of Physics.

CLAUDE M. LOTSPEICH, Ph. D., Assistant Professor of German. (In charge, 1909-10.)

EMILIE WATTS McVEA, A. M., Assistant Professor of English.

GEORGE HENRY ALLEN, Ph. D., Assistant Professor of Latin.

ISAAC JOSLIN COX, Ph. D., Assistant Professor of History.

HARRY SHIPLEY FRY, Ph. D., Assistant Professor of Chemistry.

GEORGE WALLACE UMPHREY, Ph. D., Assistant Professor of Romance Languages.

FRANK WASHINGTON BALLOU, A. M., Assistant Professor of the History and Principles of Education.

JOHN JERMAIN PORTER, A. B., Assistant Professor of Metallurgy.

CHARLES NAPOLEON MOORE, Ph. D., Assistant Professor of Mathematics.

SAMUEL McINTOSH ALLEN, Ph. D., Assistant Professor of Physics.

ARTHUR JAMES KINSELLA, A. M., Instructor in Greek.

ELSE SCHRADER, A. M., Instructor in German.

EARL FREDERICK FARNAU, A. M., Instructor in Chemistry.

HARRY LEWIS WIEMAN, A. M., Instructor in Biology.

JAMES FRANCIS DILWORTH, A. M., Instructor in English History.

TAYLOR SCOTT CARTER, Ph. D., Instructor in Physics.

J. ERNEST CARMAN, B. S., Instructor in Geology.

LEONARD BLOOMFIELD, A. M., Instructor in German.

STUDENTS, 1908–1909.

THE GRADUATE SCHOOL.

FELLOW BY COURTESY (In Greek).

Thayer, Gordon W., Cincinnati.....304 Oak St.
A. B., Harvard University, 1906; A. M., Harvard University, 1907.

THE COLONIAL DAMES FELLOW IN OHIO VALLEY HISTORY.

Sweeney, Edgar Chew, Cincinnati.....321 Mc Gregor Ave.
A. B., Marietta College, 1908. (History.)

THE HANNA FELLOW IN PHYSICS.

Gowdy, Robert E. Clyde, Cincinnati.....2115 Auburn Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1907. (Physics, Mathematics, Mineralogy.)

THE TEACHING FELLOW IN ZOOLOGY.

Peaslee, Leon D., Cincinnati.....2356 Ohio Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Biology, Geology, Paleontology.)

THE TEACHING FELLOW IN BOTANY.

Sauer, Louis Wendlin, Cincinnati.....Central Ave. and Baymiller St.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Biology. Geology, English.)

UNIVERSITY SCHOLARS.

Braam, Maximilian.....College Hill, O.
A. B., University of Cincinnati, 1906. (German.)

Ellis, John De Moss, Newport, Ky.....803 Maple Ave.
A. B., University of Cincinnati, 1907. (Economics.)

Stearns, Chilton Rupert, Norwood, O.....Floral Ave.
A. M., University of Toronto, 1904. (History.)

GRADUATE STUDENTS.

Allgaier, Jennie, Cincinnati.....2921 Werk Rd.
A. B., University of Cincinnati, 1901. (English.)

Andrew, Agnes, Cincinnati.....3600 Shaw Ave.
A. B., University of Cincinnati, 1903. (Biology.)

Andriessen, Emma, Cincinnati.....116 Parker St.
A. B., University of Cincinnati, 1908. (German.)

Benedict, Mrs. Agatha Hope Rice, Cincinnati....857 Hutchins Ave.
B. L., University of Cincinnati, 1895. (Greek.)

Bentley, Mary Julia, Cincinnati.....3471 Evans Place.
A. B., University of Cincinnati, 1898. (Latin.)

Bosch, Frederick Sixtus Christian, Cincinnati.....2653 Lydell St.
German Theological School, New Brunswick, N. J., 1901. (Greek.)

Brand, Louis, Cincinnati..... 14 W. Charlton St.
Ch. E., University of Cincinnati, 1907; E. E., University of Cincinnati, 1908. (Physics, Mathematics.)

Braun, Annette Frances, Cincinnati.....2702 May St.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Biology.)

Burke, Daniel Laurence, Cincinnati.....1539 Pullan Ave.
B. S., Columbia University, Teachers College, 1906. (Education.)

Carrington, Elizabeth Cabell, Cincinnati.....341 Forest Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Clopper, Edward Nicholas, Cincinnati.....Winton Place.
B. S., Bethany College, 1897. (Political Science.)

Condit, Arthur Thomas, Cincinnati.....114 Lyon St.
A. B., Wabash College, 1905. (Greek.)

Cope, Ella Mae, Hamilton, O.....933 Dayton St.
A. B., Mt. Holyoke College, 1907. (History.)

Corbett, Mary Jane, Cincinnati.....Lane Seminary Grounds.
A. B., Hillsdale College, 1902; A. M., University of Michigan, 1907. (Political Science.)

Cramer, William Gustavus, Cincinnati.....273 Southern Ave.
A. B., University of Cincinnati, 1901. (German.)

Cummins, Ralph, Cincinnati.....3453 Evans Place.
A. B., University of Cincinnati, 1908. (History.)

Davis, Ella, Cincinnati.....650 Prospect Place.
A. B., University of Cincinnati, 1908. (Economics.)

Donnelly, Alice Moore, Cincinnati.....4307 Hamilton Ave.
B. L., University of Cincinnati, 1890. (Greek.)

Emerson, Ruth Naney..... College Hill, O.
A. B., Wellesley College, 1907. (English.)

Farnau, Earl F., Covington, Ky.....20th and Scott Sts.
A. B., University of Cincinnati, 1905; A. M., University of Cincinnati, 1907. (Chemistry, Physics, Mathematics.)

Findley, Margaret Anne, Cincinnati.....519 Ludlow St.
B. L., University of Cincinnati, 1899. (Economics.)

Geismar, Siegfried, Cincinnati.....3029 Woodburn Ave.
A. B., University of Cincinnati, 1908. (German.)

Goodman, Julia Morse, Cincinnati.....115 Ludlow St.
A. B., Wellesley College, 1907. (History.)

Gosling, Thomas Warrington, Cincinnati.....558 Evanswood Pl.
A. B., Yale University, 1894; A. M., Yale University, 1904. (English Language, English Literature, Romance Languages.)

Granniss, Lincoln D., Milford, O.....Box 237.
A. B., Yale University, 1906. (Latin.)

Gross, Louis Daniel, Cincinnati.....207 Forest Ave.
A. B., University of Cincinnati, 1908. (Philosophy.)

Hansen, Mrs. Hermine Zipperlen, Cincinnati.....The Glencoe Hotel.
B. L., University of Cincinnati, 1898. (German.)

Hatterschide, Edward, Bond Hill, O.....Forest Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Hoban, May Belle, Cincinnati.....1363 Myrtle Ave.
A. B., University of Cincinnati, 1903. (English.)

Homburg, Emil, Cincinnati.....104 W. Clifton Ave.
A. B., University of Cincinnati, 1902. (Chemistry.)

Houser, Lulu, Felicity, O.....Middleton Ave.
A. B., Oberlin College, 1908. (English.)

Howell, Sara Jean, Cincinnati.....2611 Ashland Ave.
A. B., University of Cincinnati, 1900. (English.)

Isaacs, Nathan Tovio, Cincinnati.....702 W. 9th St.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Economics.)

Jacubowitz, Emanuel, Rochester, N. Y.....1350 Burdette Ave.
A. B., University of Cincinnati, 1908. (Philosophy.)

Jenkins, Alexander Lewis, Cincinnati.....2348 Ohio Ave.
B. M. E., State College of Kentucky, 1904; M. M. E., University of Cincinnati, 1907. (Mathematics.)

Johnston, George M.....Blue Ash, O.
A. B., Wooster University, 1895. (Education.)

Johnston, Pliny Andrew, Cincinnati.....1727 Hewitt Ave.
A. M., University of Cincinnati, 1907. (Education.)

Kiely, Ellen Elizabeth, Cincinnati.....420 Broadway.
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1908. (Romance Languages.)

Kinsella, Arthur James, Cincinnati.....1615 Hopple St.
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1908. (Greek.)

Kleinschmidt, Ethel Dana, Cincinnati.....759 McMakin Ave.
A. B., University of Cincinnati, 1902. (Political Science.)

Kohnky, Frances, Cincinnati.....Crown St. and Essex Pl.
A. B., University of Cincinnati, 1908. (Mathematics.)

Kreimer, Edith, Cincinnati.....1826 Freeman Ave.
A. B., University of Cincinnati, 1909. (Romance Languages.)

Lambdin, Lucy M., Cincinnati.....The Glencoe Hotel.
B. L., University of Cincinnati, 1894. (English.)

Lanz, Léa Blanche, Cincinnati.....548 Ridgeway Ave.
A. B., University of Cincinnati, 1908. (Romance Languages.)

Lewis, Clifford Spencer, Cincinnati.....2102 Fulton Ave.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1902. (Mathematics, Physics, Astronomy.)

Lipene, Herman, Cincinnati.....927 Richmond St.
Budapest and Vienna, 1907. (Philosophy.)

Little, Jessie, Cincinnati.....2872 E. Montana Ave.
A. B., University of Cincinnati, 1897. (Education.)

Lotze, Erna Magdalen, Cincinnati.....733 E. Ridgeway Ave.
A. B., University of Cincinnati, 1904. (German.)

McConaha, Grace Chisholm, Cincinnati.....1056 Wesley Ave.
A. B., University of Cincinnati, 1903. (History.)

Mackzum, Henrietta, St. Bernard, O.....4612 Carthage Pike.
A. B., University of Cincinnati, 1909. (History.)

Marshall, Thomas Franklin, Cincinnati.....The Alexandra.
A. B., Lake Forest College, 1894; A. M., Columbia University, 1898. (History, Education, Philosophy.)

Mittendorf, Grace Ruth, Cincinnati.....124 Hosea Ave.
A. B., University of Cincinnati, 1907. (English.)

Nippert, Eleanor Catherine, Cincinnati..Krug Bldg., Woodburn Ave.
A. B., University of Cincinnati, 1903. (Comparative Literature.)

Oesper, Ralph Edward, Cincinnati.....2117 Langdon Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Ottermann, Charles Louis, Cincinnati.....2608 Jefferson Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Parker, Mrs. Harriet Lewis, Cincinnati.....4233 Langland St.
B. L., Bucknell University, 1894. (Philosophy.)

Parker, William Hammond, Cincinnati.....4233 Langland St.
Ph. B., Bucknell University, 1897. (Economics, Political Science, Philosophy.)

Poole, Emily, Cincinnati.....2926 Woodburn Ave.
B. L., University of Cincinnati, 1899. (English.)

Porter, John J., Cincinnati.....1342 Meier Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Powell, Caroline Ann, Cincinnati.....2854 Stanton Ave.
A. B., University of Cincinnati, 1895. (Education.)

Prather, Florence Dombey, Cincinnati.....636 Crown St.
A. B., Vassar College, 1908. (History.)

Pride, Ora Lee, Cincinnati.....3150 Jefferson Ave.
A. B., Antioch College, 1905; A. M., University of Cincinnati, 1907. (Philosophy, Psychology, Greek.)

Rabenstein, Matilda Agnes, Cincinnati.....2816 Highland Ave.
A. B., University of Cincinnati, 1896; A. M., University of Cincinnati, 1899. (German.)

Ratterman, Helena T., Cincinnati.....1532 Elm St.
A. B., University of Cincinnati, 1903. (English.)

Rawson, Marjorie, Cincinnati.....3767 Clifton Ave.
A. B., Bryn Mawr College, 1906. (English.)

Rea, John Dougan, Cincinnati.....502 Riddle Rd.
A. B., Yale University, 1903; A. M., Yale University, 1905. (Latin, Greek.)

Rhinow, Arthur B., Cincinnati.....1104 Dayton St.
A. M., University of Cincinnati, 1905. (Philosophy, German, History.)

Rieman, Edward G., Cincinnati.....2287 Loth St.
A. B., University of Cincinnati, 1908. (Physics.)

Rowell, Mary Emma, Cincinnati.....849 Hutchins Ave.
A. B., University of Cincinnati, 1907. (Mathematics.)

Russell, Francis Marion, Cincinnati.....3022 Concordia St.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1906. (Biology.)

Sanders, Ethel, Cincinnati.....2918 Montana Ave.
A. B., University of Cincinnati, 1907. (History.)

Schwartz, Albert, Cincinnati.....1334 Lincoln Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Seat, Mrs. Elizabeth Ferguson, Norwood, O.....4615 Main Ave.
A. B., Mary Sharp College, 1882. (English.)

Selbert, Louis, Cincinnati.....3514 Bevis Ave.
A. B., University of Cincinnati, 1909. (Romance Languages.)

Senger, Harry Lech, Cincinnati.....3206 Woodburn Ave.
A. B., University of Cincinnati, 1898; A. M., University of Cincinnati, 1906. (Latin, Greek, Sanskrit.)

Senior, Clara, Cincinnati.....Frances Lane.
A. B., Smith College, 1907. (English.)

Shaw, Fred, Rushsylvania, O.....Lane Seminary.
Ph. B., Ohio University, 1906. (History.)

Shreve, Charles Henry, Cincinnati.....56 Haddon Hall.
B. S., Harvard University, 1906. (Chemistry.)

Siehl, Benjamin, Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Siehl, Charles, Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906. (Mathematics.)

Smith, Elliot, Cincinnati.....3607 McCormick Rd.
A. B., University of Minnesota, 1903. (Astronomy, Mathematics, Physics.)

Stein, Alice E. von, Cincinnati.....Flat 6 Teranagh.
A. B., Mt. Holyoke College, 1906. (English.)

Sullivan, Blanche Laura, Cincinnati.....1817 Josephine St.
A. B., Trinity College, 1905. (Education.)

Thomas, Alma Holdt, Cincinnati.....369 Howell Ave.
A. B., University of Cincinnati, 1900. (German.)

Thorp, Lambert, Cincinnati.....512 Prospect Pl.
B. S., Massachusetts Institute of Technology, 1906. (Chemistry.)

Ulrich, Susanne Carolina, Norwood, O.....5118 Turrell Ave.
B. L., Ohio Wesleyan University, 1904. (German.)

Wagner, Stella M., Cincinnati.....9th and Linn Sts.
A. B., University of Cincinnati, 1906. (Comparative Literature.)

Webber, Winfred Paul, Cincinnati.....3548 Bevis Ave.
A. B., Defiance College, 1902; A. M., University of Cincinnati, 1908. (Mathematics.)

Weihl, Elsa Alice, Cincinnati.....2712 Hackberry St.
A. B., University of Cincinnati, 1904. (German.)

Wilson, Glorvina, Ft. Thomas, Ky.....99 Ft. Thomas Ave.
B. L., Ohio Wesleyan University, 1906. (English.)

Wise, Isaac Meyer, Cincinnati.....3816 Dakota Ave.
A. B., University of Cincinnati, 1908. (History.)

*Woodall, Brent, Covington, Ky.....439 Greenup St.
A. B., University of Cincinnati, 1907. (English.)

Zanoni, Elizabeth, Cincinnati.....357 Howell Ave.
A. B., University of Cincinnati, 1905. (Education.)

TOTAL..... 101.

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* Deceased, November, 1908.

INFORMATION FOR STUDENTS.

ADMISSION.

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School.

Students entering the Graduate School should apply to the Dean of the Graduate School, during the first week of either the first or second semester, between the hours of 9 and 12 A. M. If not a graduate of this university the applicant should be prepared to give proof of his academic degree or degrees, and should afford evidence of the character of the courses he has taken in the college from which he has been graduated. On the presentation of satisfactory credentials a card of admission to the Graduate School will be issued to the applicant. Students will not be admitted to the Graduate School after the third week of the semester.

FEES IN THE GRADUATE SCHOOL.

All fees must be paid in *advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Dean is authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

Library Fee.—All graduate students are charged a library fee of five dollars per year.

Tuition.—Tuition is free to residents of Cincinnati. Graduate students not residents of the city are charged tuition at the rate of three dollars per credit hour. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to nine dollars a semester or eighteen dollars per year. All tuition fees are payable in advance.

Laboratory Fees.

Psychology, five dollars per semester, in advance.
Geology, five dollars per semester, in advance.
Biology, ten dollars per semester, in advance.
Physics, ten dollars per semester, in advance.
Chemistry, fifteen dollars per semester, in advance.

A deposit of fifteen dollars at the opening of the semester is required of all students taking Chemistry, to insure the University against loss by breakage in the Chemical Laboratory. This

deposit will be returned at the end of the year after deductions have been made for breakage.

A student who elects a laboratory course shall not be permitted to enter such a course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Diploma Fees.—A diploma fee of ten dollars is required of those who receive the Master's degree and twenty dollars of those who receive the Doctor's degree. This fee must be paid at least two weeks before the day appointed for conferring the degree. If for any reason the degree is not conferred the fee will be returned.

INSTRUCTION.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In order to receive the Master's degree the candidate must have completed satisfactorily courses representing twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

For the Doctor's degree three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole

time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate, at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German, and shall be required to complete forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING.

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree.

All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE.

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS.

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarships carry a stipend of from one hundred to five hundred dollars. (See list given below.) The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

Foundations.

In the year 1900 the Daughters of the American Revolution established a Fellowship in American History, yielding an income of $100 per year.

In the year 1904 the Alliance Française of the city of Cincinnati established a Scholarship of $300, to be awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

In the year 1906 the Society of Colonial Dames established a Fellowship in Ohio Valley History of the value of $300 a year.

In the same year Mrs. Henry Hanna and Miss Mary Hanna established a Fellowship in Physics, in honor of Mr. Henry Hanna. The value of this fellowship is $500 a year.

COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Porter.

The Cincinnati Observatory, constituting the astronomical department of the University, is situated on the highest point of Mount Lookout. The grounds comprise about six acres. In the center of this tract is the main building, surmounted by a thirty-foot dome. This dome houses the new equatorial recently built by the Alvan Clark and Sons' Corporation. The diameter of the objective is sixteen inches, and the focal length slightly over twenty feet. The instrument is equipped with driving clock, micrometer, electric lighting and other devices requisite for convenient manipulation. The magnifying powers range from 80 to 800.

In the western wing is placed the meridian circle by Fauth and Co. This instrument has an aperture of five inches and a focal length of seventy inches. The circle is divided to five minutes of arc, and read by four microscopes to single seconds. The sidereal clock, by Molyneux, is also in this wing. The eastern wing is used as a library and computing room.

A smaller observatory, named the O. M. Mitchel Building, in honor of the original founder of the institution, has been erected for the reception of the eleven-inch equatorial. The Observatory possesses also a four-inch equatorial by Clark, a sidereal chronometer by Bond, a chronograph by Fauth, and a mean-time clock by Ritchie. The library contains about 3,500 volumes, including most of the star catalogues and many valuable works of reference.

The scientific activity of the Observatory has been uninterrupted since the removal in 1873 to the present site. During this period sixteen numbers of the regular publication have been issued, besides many memoirs which have appeared in the astronomical journals. Special prominence is given to stellar astronomy, many important discoveries having been made in this field. The Observatory is also cooperating at the present time with the International Geodetic Association in the determination of the variation of latitude.

FOR UNDERGRADUATES AND GRADUATES.

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester;* hours to be arranged.
Professor Porter.

5b. Computation of a parabolic orbit from three observations, **and of an elliptic orbit** with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester;* hours to be arranged.
Professor Porter.

Courses 4a and 5b are given at the Observatory.

* BIOLOGY.

Professor Guyer, Associate Professor Benedict, Mr. Wieman.

To pursue advanced courses in biology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES.

To enter upon work for the degree of Master of Arts in zoology, students must have completed courses 1a, 2a, 3b, 4b, 10b, 15a, 16a, 17b, 18b, or their equivalents. Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who elect their majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology. The requirements for a higher degree, when biology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 23).

LABORATORIES.

The Biological Department occupies the east half of the basement and the second and third floors of Cunningham Hall. The fixtures have been carefully designed to meet all of the requirements of modern biological work, and the laboratories are well provided with optical apparatus and the various instruments of biological technique. Besides these, a liberal supply of more special appliances is at the service of the investigator. Special laboratories are provided for students taking advanced courses and courses of research.

The anatomical laboratory in the basement is provided with slate-top dissecting tables, chemical desks, a stone pier for photomicrography, a tank for air pressure injection and an ice chamber for the storage of animals which are being dissected. Adjoining this laboratory are two small laboratories for research.

On the second floor are the lecture-room, the departmental library, the general biological laboratory, together with its ad-

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*For a statement of the undergraduate courses prerequisite to advanced work in Biology, see the announcement of the McMicken College of Liberal Arts

joining preparation-room, dark-rooms, and laboratories for students taking advanced courses and courses of research. The lecture-room can be darkened for the use of the stereopticon, and is provided with modern charts and models for purposes of demonstration.

The third floor, under a glass roof, is arranged as a vivarium, and is adapted for research in experimental morphology and physiology. A constant temperature can be maintained by means of special heating apparatus. The room is provided with a large land-and-water cage for amphibia, and a number of large plate-glass aquaria for marine and fresh-water organisms. Ample provision is made, moreover, for breeding and keeping reptiles, birds and mammals, and also for the cultivation of various kinds of plants.

An affiliation has been established between the Biological Department and the Cincinnati Zoological Garden, one of the most famous institutions of its kind in America, whereby University students are offered very exceptional opportunities for the study of the habits and structures of wild animals.

FOR UNDERGRADUATES AND GRADUATES.

15a. Embryology of Vertebrates.—Lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 16a. *First semester*, M., W., F., 10:30-11:30. Mr. Wieman.

Course 15a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 15a and 19a are given in alternate years; 15a will be omitted in 1909-10.

16a. Embryology, Laboratory.—The work is based largely on the frog, chick, and pig. *First semester*, M., W., 1:00-4:00. Mr. Wieman.

Course 16a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 16a and 20a are given in alternate years; 16a will be omitted in 1909-10.

17b. Vertebrate Zoology and Comparative Anatomy.—Lectures on the anatomy, classification, habits, and distribution of vertebrates, to be accompanied by a study of the living forms in the field and at the Zoological Garden. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester*, M., W., F., 10:30-11:30. Mr. Wieman.

Course 17b is open to students who have passed in Courses 15a and 16a.

Courses 17b and 21b are given in alternate years; 17b will be omitted in 1909-10.

18b. Comparative Anatomy of Vertebrates, Laboratory.—The work consists in the careful dissection and study of selected forms. *Second semester,* M., W., 1:00-4:00. Mr. Wieman.

Course 18b is open to students who have passed in Courses 15a and 16a.

Courses 18b and 22b are given in alternate years; 18b will be omitted in 1909-10.

19a. Animal Histology.—Lectures and recitations upon the microscopic structure of tissues and organs. This course must be accompanied by Course 20a. *First semester,* M., W., F., 10:30-11:30. Mr. Wieman.

Course 19a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 19a and 15a are given in alternate years; 19a will be given in 1909-10.

20a. Animal Histology, Laboratory.—Practical studies on the microscopic anatomy of animal tissues and organs. *First semester,* M., W., 1:00-4:00. Mr. Wieman.

Course 20a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 20a and 16a are given in alternate years; 20a will be given in 1909-10.

21b. Physiology.—Discussion of the fundamental principles of physiology and their application to the human body. This course must be accompanied by Course 22b. *Second semester,* M., W., F., 10:30-11:30. Mr. Wieman.

Course 21b is open to students who have passed in Courses 19a and 20a.

Courses 21b and 17b are given in alternate years; 21b will be given in 1909-10.

22b. Physiology, Laboratory.—The student is required to perform the classical experiments on blood, circulation, respiration, absorption, muscle and nerve, central nervous system, and sense organs. *Second semester,* M., W., 1:00-4:00. Mr. Wieman.

Course 22b is open to students who have passed in Courses 19a and 20a.

Courses 18b and 22b are given in alternate years; 22b will be given in 1909-10.

23. Field Work.—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three hour course. Hours to be arranged. Associate Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany or zoology.

24a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester,* T., 10:30-11:30. Associate Professor Benedict.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

25a. Plant Histology, Laboratory.—In this course the student will be given sufficient practice in miscroscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester*, M., W., 1:00-4:00. Associate Professor Benedict.

26b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester*, T., 10:30-11:30.

Associate Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

27b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 26b. *Second semester*, M., W., 1:00-4:00.

Associate Professor Benedict.

PRIMARILY FOR GRADUATES.

30. Current Problems in Biology.—Lectures to accompany courses of research. A reading knowledge of French or German is required. Th., 4:00-6:00. Mr. Wieman.

31. Research.—Hours to be arranged.

Professor Guyer and Associate Professor Benedict.

32a. Anatomy and Physiology of the Cell; Non-Developmental Phenomena.—Lectures on the structure and function of cells other than the germ cells. *First semester*, M., W., 4:00-5:00.

Professor Guyer.

33b. Anatomy and Physiology of the Cell; the Germ Cell.—Lectures dealing with the cell from the viewpoint of development and inheritance. *Second semester*, M., W., 4:00-5:00.

Professor Guyer.

34. Cytology, Laboratory.—A laboratory course intended to serve as an introduction to cytological technique and to the general field of cellular biology. Each student is assigned a special problem. T., Th., 1:00-4:00. Professor Guyer.

*CHEMISTRY.

Professor Jones, Assistant Professor Fry, Assistant Professor Porter, Mr. Farnau.

PREFATORY.

There never was a period when chemistry touched the various sciences and the requirements of practical life at so many

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*For a statement of the undergraduate courses prerequisite to advanced work in Chemistry, see the announcement of the McMicken College of Liberal Arts.

points as it does at the present time. This manifold relationship has made it necessary to arrange courses in chemistry which may be sufficiently varied to suit the requirements of many classes of students. A choice of consecutive courses may be made by students who are taking chemistry as a disciplinary study, and with a desire to complete a general education. Many courses have been offered which have a definite and intimate relationship to the industrial activities of modern life. These are designed to meet the needs of those who are planning to become chemical engineers, or of those who expect to enter upon a business career which makes such a knowledge of chemistry a necessity. Furthermore, a number of specialized courses of an advanced character have been announced to give the proper training to those students who may wish to carry on graduate work in the nature of research leading to a Master's or a Doctor's degree. For such advanced work in chemistry, students must acquire a reading knowledge of German and French very early in the course, since an acquaintance with these languages is assumed in the later work.

EQUIPMENT.

The Department of Chemistry occupies quarters in Hanna Hall Annex and the first floor of Hanna Hall. The main laboratories are devoted to general inorganic chemistry, elementary organic chemistry, qualitative and quantitative analysis. There are special laboratories arranged for courses in organic, physical, and technical chemistry. A thoroughly equipped laboratory has been provided for metallurgical work; gas and electric furnaces, motor-driven blowers, grinders, and other machines have been installed. Several private laboratories are provided for instructors, and for graduate students who are engaged in research. The laboratories are open from 8.30 a. m., to 5 p. m. on every working day except Saturday, when they close at 1:00 o'clock. Concerning laboratory fees and special deposit, see page 22.

THE LIBRARY.

A special Chemical library, comprising about 2,000 volumes, has commodious quarters on the first floor of Hanna Hall. It contains complete series of the important periodicals in English, German, French, and Italian, and nearly all current journals of chemistry are kept on file. The standard hand-books and works of reference, and many special and technical works of recent publication are available. Treatises necessary for advanced work or research work will be obtained to meet the particular needs of students pursuing such work.

SPECIAL REQUIREMENTS FOR HIGHER DEGREES.

The Degree of Doctor of Philosophy.

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12, 13. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the following courses in accordance with their choice, before receiving the degree:

(a) *Inorganic Chemistry*: 10b, 11b, 21 (one semester); 17 (one semester); and ten credit hours elected from Courses 14, 15a, 16a, 20, 24, 28b, 34, 35b.

(b) *Organic Chemistry*: 20, 21, 35b, 17 (one semester); and ten credit hours elected from Courses 10b, 11b, 14, 18b, 24, 28b, 34.

(c) *Physical Chemistry*: 10b, 20, 34, 17 (one semester); and ten credit hours elected from Courses 14, 19a, 11b, 21, 24, 28b, 35b.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the head of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12 and 13 (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree.

The Department of Chemistry requires that at least sixteen of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail upon a subject suggested by the instructor under whose direction the student has been placed.

FOR UNDERGRADUATES AND GRADUATES.

10b. Advanced Inorganic Chemistry.—Three exercises a week during the second semester. In this course the less familiar elements and compounds and the more recent theories of inorganic chemistry are discussed. T., Th., S., 8:30-9:30.

Prerequisite: Courses 5a, 6, and 7b. Professor Jones.
Omitted in 1909-10.

11b. Inorganic Preparations.—Three laboratory exercises a week during the second semester. Preparation of specimens of inorganic compounds. M., W., F., 1:00-4:00. Professor Jones.

Prerequisite: Course 7b. Omitted in 1909-10.

20. Advanced Organic Chemistry.—Lectures, embracing a systematic study of the principles and practice of organic chemistry, and treating of the modes of formation, properties, reactions, and constitution of typical members of the most important classes of organic compounds. T., Th., S., 9:30-10:30.
Professor Jones.

Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. This course requires considerable reading in the journals of chemistry and in various hand-books and works of reference. M., W., F., 1:00-4:00. Professor Jones.

Prerequisite: As in Course 20.

24. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter from the earliest times to the present, and considers the development of the fundamental laws of the science of chemistry. Special attention will be directed to the classical memoirs of the Greek Philosophers, the tenets of the Alchemists, and those researches of the past century that have developed the Atomic and Structure Theories of modern chemistry. Lectures, collateral readings and papers. T., 4:00-5:00; S., 8:30-9:30.
Assistant Professor Fry.

Prerequisite: 5a, 6, 8a and 9a, or 20 and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric spark) and absorption spectra of inorganic and some organic substances will be studied from the chemist's point of view. Two periods a week. Hours to be arranged.
Professor Jones.

Prerequisite: 5a, 6, 8a, 9a; Physics, 1 year.

PRIMARILY FOR GRADUATES.

30. Research.—This course will require at least eight periods of laboratory work per week under the direction of some instructor in the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d). Professor Jones, Assistant Professor Fry, Assistant Professor Porter, and Mr Farnau.

34. Mathematical Chemistry.—A study of the application of exact and approximate mathematics in physical science. Two periods a week. Hours to be arranged. Mr. Farnau.

Prerequisite: Chemistry 12, 13; Math. 8a, 9b.

35b. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses, and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases will be presented in detail. Topics for consideration will be chosen from

the following: optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpines; tautomerism; the polypeptides, proteins, etc. Two hours a week, *second semester*, M., F., 11:30-12:30. Professor Jones.

40. **Journal Club Meetings.**—Instructors and advanced students of the department will present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings will be held fortnightly, and will last one hour. Subjects to be discussed will be announced one week in advance.

COMPARATIVE LITERATURE.

(The Nathaniel Ropes Foundation for the Comparative Study of Literature.)

During the year 1909-10 it is the purpose of the University to offer three courses of lectures in Comparative Literature on the Ropes Foundation. The first of these courses will be given by Professor Brander Matthews, Professor of Dramatic Literature in Columbia University, who will lecture on Molière, November 8th to 13th. The names of the other lecturers and the dates and titles of their lectures will be published in separate announcements.

ECONOMICS.

(The Sinton Professorship.)

Professor Hicks.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **Economics**, is prerequisite to Course 4, as shown below.

2a. **Economic History.**—A study of the industrial development of society since the tenth century. The subjects considered include the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times, together with the problems arising therefrom. *First semester*, T., Th., 11:30-12:30. Professor Hicks.

3b. **Economic History of the United States.**—The economic development of the United States from 1789 to the present: its territorial expansion and growth of population; extractive industries, especially agriculture and mining; manufactures; trade, domestic and foreign; transportation facilities: canals, railroads, and the merchant marine; experiments in money and banking; tariff; industrial corporations and trusts; labor and labor organizations; and government regulation of industry. *Second semester*, T., Th., 11:30-12:30. Professor Hicks.

4. **Current Economic Problems.**—The following subjects will be studied during 1909-10:

(*a*) First semester, socialism and trusts.

(*b*) Second semester, labor and the railroad problem. M., W., 3:00-4:00. Professor Hicks.

Course 4 is open to students who have had Course 1 or Course 6.

5. **Selected Readings.**—The primary purpose of this course is to afford opportunity for more extended study of the subjects considered in the preceding courses, but it may be taken by those who desire to pursue systematic reading in the field of economics, provided that they are prepared to enter upon such work with profit. Special attention will be given to the literature of the topic selected. F., 11:30-12:30 or 3:00-4:00.

Professor Hicks.

Course 5 is recommended to students who have elected Course 1, 2a, 3b, or 4. Credit, one or two hours.

PRIMARILY FOR GRADUATES.

6. **Economic Theory.**—An advanced course in the elements of economics. The work will consist in a comparative study of the views of representative economists. M., 4:00-6:00.

Professor Hicks.

7. **Seminary.**—Opportunity is here given for the detailed study of specific problems in economics. Credit according to work done. W., 4:00-. Professor Hicks.

EDUCATION.

Professor Burris, Professor Hall, Assistant Professor Ballou.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **History and Principles of Education,** is prerequisite to certain advanced courses in Education, as shown below.

Education 3. Principles and Problems of Secondary Education.—This course is intended especially for advanced students and teachers who contemplate appointment to high school positions. The first part of the course will consider the principles of secondary education, with special reference to those derived from the psychology of adolescence. The second part of the course will be devoted to a critical consideration of the problems of high school organization, with special reference to courses of study, relative value of studies, and methods of instruction.

Those who have not had college courses in psychology and the history of education must obtain special permission from the Dean of the College for Teachers before registering for the course. S., 9:30-11:30, throughout the year.

Assistant Professor Ballou.

PRIMARILY FOR GRADUATES.

Education 5. Philosophy of Education.—Lectures, required readings, and discussions. The first part of the course will present an integrated view of the facts of the various sciences having educational significance, for the purpose of arriving at a

philosophical definition of education as a whole. The second part of the course will deal with the organization of elementary education as determined by its philosophical meaning thus derived, and as modified by practical considerations. In appropriate connections there will be special consideration of the process of education as world building. The historical and logical origin, meaning, and classification of studies will be briefly considered. Special attention will be given to the question, what happens when we try to know, and to the place of symbolism and systems of imitational and inventional expression in education. Credit will be given only to those who take the course throughout the year. S., 8:30-9:30, throughout the year.
Professor Burris.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. Two hours, to be arranged before registration. Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Place of meeting to be arranged. W., 4:00-6:00, throughout the year.
Professor Hall.

Education 17. Educational Classics.—An advanced course in the History of Education. From year to year it will consist of a critical study of the more important writings of "Great Educators" of special periods. For the year 1909-10 the period covered will be the eighteenth and nineteenth centuries. W., 4:00-6:00, throughout the year. Professor Burris.

Open to those who have passed in Education 1 or its equivalent.

ENGLISH.

Professor Krapp, Associate Professor Miller, Assistant Professor McVea.

FOR UNDERGRADUATES AND GRADUATES.

7a. Old English Prose.—An elementary reading course in Old English, the texts being taken from Bright's *Anglo-Saxon Reader*. *First semester*, M., W., F., 10:30-11:30.
Professor Krapp.

Course 7a is prerequisite to Courses 8b, 9, and 10, and is required of all students who choose English as a major subject. Further conditions for a major in English may be satisfied by Course 8b, or 9, or 10.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester*, M., W., F., 10:30-11:30.
Professor Krapp.

9. English Literature from the Conquest to the Death of Chaucer.—In the first semester selected works will be read (Emerson, *Middle English Reader*) which illustrate the development of English literature and the English language before Chaucer. The second semester will be devoted to the life and works of Chaucer. Th., 3:00-5:00. Professor Krapp.

Course 9 is given in alternate years. It will not be given in 1909-10.

10. **The History of the English Language.**—The general development of the English language, with special reference to the modern period. T., Th., 4:00-5:00. Professor Krapp.

Course 10 is given in alternate years. It will be given in 1909-10.

Students who choose English as a major subject are required to take Courses 7a and 8b, or 9, or 10.

12. **Literary Composition.**—This course will consider the various prose literary forms from the point of view of original composition. Only those students will be admitted to the course who satisfy the instructor of their ability to write well. T., Th., 2:00-3:00. Assistant Professor McVea.

14. **The English Drama before Shakspere.**—The origins of the English drama and its earlier manifestations in miracle plays, moralities, and interludes will be studied. M., W., F., 11:30-12:30. Associate Professor Miller.

17a. **Literary Criticism.**—An examination of the theories and opinions concerning poetry and the drama of some of the greater critics, from Dryden to Matthew Arnold. *First semester*, T., Th., 1:00-2:00. Associate Professor Miller.

19b. **The English and Scottish Popular Ballads.**—A study of the characteristics of folk-poetry and of the origin and development of the popular ballad. *Second semester*, T., Th., 1:00-2:00. Associate Professor Miller.

FOR GRADUATES ONLY.

20. **English Seminary.**—The life and works of Chaucer. W., 3:00-5:00, and hours for conference on other subjects by appointment. Professor Krapp.

GEOLOGY AND GEOGRAPHY.

Professor Fenneman, Mr. Carman.

The Department of Geology and Geography occupies the fourth floor of McMicken Hall, except a part of the space used for a museum of zoology and geology. A general laboratory is used for work with maps and fossils and for work with hand specimens of rocks and minerals, with only such apparatus and reagents as may be carried in the field. A laboratory for determinative mineralogy is fitted up with appliances of the most modern and approved type and another for microscopic petrography is now being equipped.

A seminar room contains the departmental library and all reference maps, topographic, geologic, and geographic, belonging to the department. Graduate students may be allowed private desks in the petrographic laboratory, which communicates with the seminar room. A lecture room, seating thirty-six students, is equipped with a stereopticon of the highest grade and with the customary models and illustrative material.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 2, **General Geology**, is prerequisite to Courses 5b and 9a, as shown below.

5b. **Field Geology and Survey Methods.**—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. This course is open to those who have had Course 2 and may be taken in connection with the second half of that course. *Second semester.* Three hours credit. Hours to be arranged by agreement with each party.
Mr. Carman.

*6a. **Crystallography.**—First half semester, a study of geometrical forms with laboratory study of crystal models; second half semester, optical principles with microscopic examination of crystals cut in definite orientation. *First semester*, T., Th., S., 8:30-9:30. Professor Fenneman.

*7b. **Mineralogy.**—System of classification of minerals; laboratory study of specimens of all the more common species; determinative mineralogy and blow-pipe analysis. This course is intended to follow Course 6a, which is prerequisite. *Second semester*, T., Th., S., 8:30-9:30. Professor Fenneman.

12. **Petrology.**—A study of rocks with reference to their mineral constitution, chemical composition, structure, origin, and classification. The microscopic study of thin sections is united with study of the corresponding hand specimens and of chemical composition when good analyses are available. Course 7b is prerequisite. T., Th., S., 9:30-10:30. Professor Fenneman.

9a. **Historical Geology.**—The rock formations of each geologic period, chiefly in North America, studied in historical order; their description, geographic distribution, and explanation; physical conditions and events attending the formation of each as known from its character and fossils; life development and faunal migrations. Course 2 is prerequisite. *First semester*, M., T., W., Th., F., 9:30-10:30. Mr. Carman.

10. **Paleontology.**—The work of 1909-10 will be a continuation of that given in 1908-09. Open to those who have had the work of the preceding year. Those desiring to begin Paleontology should enter undergraduate Course 11. Three hours, to be arranged. Mr. Carman.

GERMAN.

†Professor Poll, Assistant Professor Lotspeich, Miss Schrader, Mr. Bloomfield.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 4, **Introduction to German Literature of the Eighteenth Century**, is prerequisite to certain advanced courses, as shown below.

5. **History of German Literature to the Nineteenth Century,** with special study of the Classic Periods of the Twelfth and

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*Course 2 is not prerequisite to Courses 6a and 7b, but these are not accepted as graduate courses for students making Geology a major, unless Course 2 or its equivalent has been taken.

†Absent on leave in Europe, 1909-10.

Eighteenth Centuries. Among other works the following will be read in 1909-10: *An Anthology of German Literature*, by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina*, and Goethe's *Faust*. Lectures in German, collateral reading. M., W., F., 10:30- 11:30.

Assistant Professor Lotspeich.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. T., 4:00-6:00.

Mr. Bloomfield.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30.

Miss Schrader.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30.

Omitted in 1909-10. Professor Poll.

PRIMARILY FOR GRADUATES.

12. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. Th., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

Omitted in 1909-10.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. Th., 4:00-6:00. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

Omitted in 1909-10.

7. Middle High-German. — Wright's *Middle High-German Primer*. Bachmann's *Mittelhochdeutsches Lesebuch*. Translation into modern German. F., 4:00-6:00. Mr. Bloomfield.

Omitted in 1908-09.

8. Old High-German.—Braune's *Althochdeutsche Grammatik*, and the same author's *Althochdeutsches Lesebuch* are used as text-books. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. F., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1909-10.

13. Gothic.—Braune's *Gotische Grammatik;* reading of selections from Ulfilas; lectures on Germanic philology. M., 4:00-6:00. Assistant Professor Lotspeich.

26. Old Norse.—Kahle's *Altislaendisches Elementarbuch*. Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00.

Assistant Professor Lotspeich.

9. **German Seminary.**—Critical study of Wolfram's *Parzival.* Th., 4:00-6:00. Mr. Bloomfield.

GREEK.

Professor Harry and Mr. Kinsella.

Many casts of works of antique art have been installed in the Greek room and in the corridors of the University. Students in both undergraduate and graduate courses have also opportunities to study the casts in the Cincinnati Art Museum.

FOR UNDERGRADUATES AND GRADUATES.

13. **Greek Art.**—A course in the grammar and history of Greek art, including architecture. Special attention will be given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. T., 10:30-11:30. Professor Harry.

The class will be limited to twenty-five students.

PRIMARILY FOR GRADUATES.

5. **Rapid Reading in the Tragic Poets.**—W., 2:00-3:00. Professor Harry and Mr. Kinsella.

*6. **Practical Exercises in Greek.**—F., 3:00-5:00. Professor Harry.

7. **Greek Seminary.**—The Attic Orators (1909-10); The Historians (1910-11). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY.

Professor Whitcomb, Assistant Professor Cox, Mr. Dilworth.

FOR UNDERGRADUATES AND GRADUATES

Undergraduate Course 3, **Reformation-Revolution-Napoleon;** Course 13, **Political History of England;** and Course 15, **General Course in American History,** are prerequisite to certain advanced courses in History, as shown below.

25. **European History Since 1814.**—An advanced course dealing with the problems of contemporary European history. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization. T., Th., 10:30-11:30. Professor Whitcomb.

Course 25 is open to students who have passed in Course 3.

40. **English Constitutional History.**—The course will trace the development of English political institutions from the Saxon period to the present times. Recommended for students who

intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 8:30-9:30.

Mr. Dilworth.

30. **American Colonial History.**—This course will touch upon certain features of the Spanish and French colonial systems, and will then consider in detail the English colonial establishments in America, the struggle between the English and French for the control of the continent, and the development of American institutions during the colonial régime. Lectures, with collateral readings and special reports. T., Th., 1:00-2:00.

Assistant Professor Cox.

31. **American Revolutionary History.**—The course will trace in outline the main features of the Anglo-American and Spanish-American revolutionary movements from 1763 to the announcement of the Monroe Doctrine in 1823.

Assistant Professor Cox.

Omitted in 1909-10.

32. **History of the Middle Period.**—A history of American expansion and internal development from the second war with Great Britain to the close of 1853.

Assistant Professor Cox.

Omitted in 1909-10.

33. **The Civil War and Reconstruction.**—The course will include a survey of the causes of the Civil War and a review of the main features of the great sectional contest and of the Reconstruction period. Lectures, with collateral readings and special reports. T., Th., 4:00-5:00. Assistant Professor Cox.

Course 33 is open to advanced students and teachers.

38. **American Territorial Diplomacy.**—The course will review the claims of various European nations to the American continent, to be followed by a detailed study of the diplomatic and frontier questions involved in the territorial expansion of the United States. M., W., F., 8:30-9:30.

Assistant Professor Cox.

Open to those who have had Course 15 or its equivalent.

Omitted in 1909-10.

20. **The United States and Spanish America.**—A study of typical Spanish colonial institutions, to be followed by a review of the relations of the United States with some portion of Spanish America. The field of intensive study for the present year will be the Isthmian region. A reading knowledge of Spanish is desirable. M., W., F., 8:30-9:30. Assistant Professor Cox.

Open to those who have had Course 15 or its equivalent.

21. **American Constitutional History.**—The course will treat of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. T., 1:00-2:00; Th., 1:00-3:00. Assistant Professor Cox.

Open to those who have had Course 13 or 15.

Omitted in 1909-10.

PRIMARILY FOR GRADUATES.

34. **Seminary in European History.**—The Period of Napoleon Bonaparte. Members of the seminary will take up special problems in the career of Napoleon and work them out with the aid of source material. This will require a general knowledge of European history from 1789 to 1815, such as is afforded in Course 3, and also an ability to read French historical prose. Two hours a week; period to be arranged. Professor Whitcomb.

39. **Seminary in American History.**—Politics and Political Leaders of the Ohio Valley. The course will be devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. Two hours per week; S., 10:30-12:30. Assistant Professor Cox.

41. **Seminary in Mediaeval History.**—This course will mean the reading of a Latin text dealing with some phase of mediaeval English or continental history, and the preparation of reports based on source material. Subject and hours to be announced later. Mr. Dilworth.

Course 41 is open to properly qualified seniors.

LATIN.

Professor Burnam and Assistant Professor Allen.

The work, while not neglecting the philological side of the subject, will emphasize more and more, as the student progresses, its historical and humanitarian aspect. The University Library has the beginning of a fair special collection, chiefly devoted to the authors most read in the course. After the second year the seminary method will be used as far as possible. The students in Palaeography will find some MSS. and a considerable collection of facsimiles and treatises at their disposal.

PRIMARILY FOR GRADUATES.

Hours in all cases to be arranged.

9. **Latin and Romance Palaeography.**—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century. Students will have abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires a reading knowledge of French and German.

10. **Latin Seminary.**—Three hours. Author studied in 1909-10 is Caesar. Assistant Professor Allen.

11. **Roman Religion.**—Students must provide themselves with G. Wissowa's *Religion und Kultus der Roemer*, Muenchen, 1902. Two hours, to be arranged. Professor Burnam.

12. Graduate Study.—Credit according to work done.
Professor Burnam and Assistant Professor Allen.

*MATHEMATICS.

Professor Hancock, Professor Slocum, Assistant Professor Moore.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 5, **Calculus, Differential and Integral,** is prerequisite to certain advanced courses, as shown below.

6a. Advanced Analytical Geometry of Two Dimensions.—C. Smith, *Conic Sections.* Lectures. M., W., F., 10:30-11:30, *first semester.* Assistant Professor Moore.

Course 6a is open to graduate students and to those who have passed in Course 5.

7b. Analytical Geometry of Three Dimensions.—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry.* Lectures, M., W., F., 10:30-11:30, *second semester.* Assistant Professor Moore.

Course 7b is open to graduate students and to those who have passed in Course 5.

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 10:30-11:30. Assistant Professor Moore.

Omitted in 1909-10.

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*
Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*
Professor Hancock.

PRIMARILY FOR GRADUATES.

30. Theory of Numbers — Rational Numbers. — Lectures founded on the Berlin lectures of Kronecker, Frobenius, and Dirichlet's Zahlentheorie. T., 4:00-6:00; S., 10:30-12:30.
Professor Hancock.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. M., 4:00-5:00; Th., 4:00-6:00, *first semester.*
Professor Slocum.

11b. Fourier's Series and Spherical Harmonics. — Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived,

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*See courses in Applied Mathematics, College of Engineering.

and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's and Lame's functions, with applications to problems in heat, electricity, potential, elasticity, etc. M., 4:00-5:00; Th., 4:00-6:00, *second semester.*
Professor Slocum.

28. **Theory of Functions.**—W., 4:00-5:00; S., 9:30-10:30.
Assistant Professor Moore.

16a. **Theoretical Mechanics.**—A modern treatment of analytical mechanics intended especially for advanced students in engineering and physics. The course will be given by lectures, supplemented by references to standard texts. *First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

Omitted in 1909-10.

16b. **The Mathematical Theory of Elasticity.**—A course in the mechanics of elastic bodies, supplementary to Course 16a. The course will be given mainly by lectures, supplemented by references to the works of Williamson, Webster, and A. E. H. Love. *Second semester,* M., 4:00-5:00; Th., 4:00-6:00.
Omitted in 1909-10. Professor Slocum.

26a. **The History and Teaching of Mathematics.**—A course in the pedagogy of mathematics, based chiefly on the historical development of the subject. Modern pedagogical theories will be studied in their relation to mathematics and used as a basis for the discussion of laboratory and other special methods of instruction. *First semester,* Th., 4:00-6:00; S., 9:30-10:30.
Omitted in 1909-10. Professor Slocum.

24. **Elliptic Integrals and Elliptic Functions.**—The theories of Legendre, Abel, Jacobi, and of Riemann, Hermite, Weierstrass. Lectures founded on the Berlin Lectures of Fuchs, Schwarz and Weierstrass. T., 4:00-6:00; S., 10:30-12:30.
Omitted in 1909-10. Professor Hancock.

25. **Application of Elliptic Functions.**—The general theory of Course 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1909-10.

20. **Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.**—Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1909-10.

18a. **Theory of Minimal Surfaces.**—The developments of Lie, Darboux, Schwarz, and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester.*
Omitted in 1909-10. Professor Hancock.

19b. **The Extended Realms of Rationality.**—Lectures. T., Th., S., 8:30-9:30, *second semester.* Professor Hancock.

Omitted in 1909-10.

FOR GRADUATES ONLY

30. Seminary—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to work done. Hours by special arrangement. Professor Slocum.

PHILOSOPHY.

Professor Tawney.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate courses 1a, **Logic**, 2b, and **Introduction to Philosophy**, are prerequisite to certain advanced courses in Philosophy, as shown below.

3a. Ancient and Mediaeval Philosophy.—An historical and critical account of the typical world-views of ancient Greece and Rome, together with a brief study of the course of philosophical and scientific thought in the Middle Ages. This course is of interest to undergraduates chiefly because the philosophical speculations of youth and of the untrained masses of people are found in this period of history. *First semester*, M., W., F., 9:30-10:30. Professor Tawney.

Course 3a is open to students who have completed at least one year of University work.

4b. Modern Philosophy.—An historical account of the transition from mediaeval to modern philosophy; the beginnings of scientific freedom, followed by a study of the intellectualism and empiricism of the seventeenth century; the critical philosophy of Kant; transcendentalism in Germany, England, and America; agnosticism and positivism; the evolution philosophy; absolute idealism, realism, and pragmatism. *Second semester*, M., W., F., 9:30-10:30. Professor Tawney.

Course 4b is open to students who have completed at least one year of University work. Students are advised to take either 2b or 3a before entering 4b.

5a. Ethics.—This is an introductory study of the moral ideas and institutions of man with some reference to the relation between morality on the one side, and political and ecclesiastical sanctions on the other. It begins with the origin and growth of morality in the race and the individual, and includes some account of the moral problem of our present society. *First semester*, M., W., F., 11:30-12:30. Professor Tawney.

Course 5a is open to students who have completed at least two years of University work.

6b. Political Philosophy.—A study of the principles of political organization, including the origin of the state, the relation of morality to legislative enactment, the concepts of natural law, natural right, the general will, and the rule of majorities. *Second semester*, M., W., F., 11:30-12:30. Professor Tawney.

Course 6b is open to students who have completed at least two years of University work.

8b. Principles of Science and the Theory of Scientific Method. This course begins with a rapid review of Course 1a and includes an outline of the method of science in general and special study of the methods of special groups of sciences, such as the mathematics, biology, physics, psychology. Some reference will be made to relations between the scientific method and the method of judgment in other than scientific fields. *Second semester;* three hours, to be arranged. Professor Tawney.

Prerequisite: Course 1a.

PRIMARILY FOR GRADUATES.

7. Types of Epistemology and Metaphysics.—A critical study of idealism, realism, agnosticism, and pragmatism as exemplified in the writings of modern, chiefly nineteenth century, writers: T. H. Green, F. H. Bradley, Josiah Royce, William James, John Dewey, Herbert Spencer, Auguste Comte, Lotze, G. E. Moore, Woodbridge, and others. Two hours, throughout the year. T., 11:30-1:30. Professor Tawney.

Prerequisite: Courses 1a, 3a, and 4b, or their equivalents.

9. Ethical and Epistemological Problems.—A study of the problems of ethics and epistemology from the standpoint of evolution. Two hours, to be arranged. Professor Tawney.

10. English Empiricism in the Eighteenth Century.—A study of the most important of the philosophical works of Hobbes, Locke, Berkeley, and Hume, with especial reference to their influence on nineteenth century thought. Two hours, to be arranged. Professor Tawney.

12a. Philosophical Method.—A study of the logic of certain typical philosophical tendencies and of the group of philosophical disciplines. The theme of the course might be called the methodology of reflection. Two hours a week. *First semester,* W., 8:30-9:30, 10:30-11:30. Professor Tawney.

PHYSICS.

Professor More, Associate Professor Ives, Assistant Professor Allen, Dr. Carter.

The Department of Physics occupies the first floor and the the larger part of the basement of Cunningham Hall. The former contains lecture and recitation rooms, offices, library and general laboratories. In the basement are the shops and a number of small rooms fitted for advanced work.

The department is supplied with modern apparatus for illustrating lectures, and for both general and advanced laboratory work. The stock is also being largely increased. A skilled mechanician is employed in making and repairing apparatus. Every facility will be offered students requiring specially constructed apparatus.

The library of the department contains the best works in Physics, and the important journals are on file.

FOR UNDERGRADUATES AND GRADUATES.

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester*, hours to be arranged. Dr. Carter.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester*, hours to be arranged. Dr. Carter.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester*, W., F., 10:30-11:30.
Omitted in 1909-10. Dr. Carter.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester*, W., F., 10:30-11:30.
Omitted in 1909-10. Dr. Carter.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Three times weekly.
Professor More.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. One afternoon a week, throughout the year. Mr. Evens.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester*, twice weekly. Professor More.

17a. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *First semester*. Twice weekly.
Omitted in 1909-10. Associate Professor Ives.

FOR GRADUATES ONLY.

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. For 1909-10, the lectures will discuss the theory of electricity and magnetism; 1910-11, heat; 1911-12, light. T., Th., 10:30-11:30. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course will be supplied with all the apparatus needed, and the assistance of the Mechanician will be at their disposal. Daily.
Professor More, Associate Professor Ives,
and Assistant Professor Allen.

POLITICAL AND SOCIAL SCIENCE.

Professor Brooks.

FOR UNDERGRADUATES AND GRADUATES.

4a. **Political Parties and Party Problems.**—A study of the organization, methods, and aims of existing political parties in the United States. The following subjects will be discussed: theory of the party system, primary and convention system, permanent party organization, the financing of parties, elements of cohesion in parties, and the principal recent aims pursued by political parties. *First semester*, T., Th., 2:00-3:00.
Professor Brooks.

11a. **Municipal Government.**—A comparative study of municipal government in the principal countries of Europe, England, and the United States, with particular reference to the reforms advocated in the latter country. Special financial and social problems of city life, such as municipal ownership, taxation of unearned increment, the drift of population to urban centers, the housing problem, sanitation, provision of facilities for recreation, the child problem in cities, etc., will also be discussed. *First semester*, T., Th., 2:00-3:00. Professor Brooks.

Omitted in 1909-10.

12b. **The Government of Cincinnati.**—A somewhat detailed study of the organization and functions of the government of Cincinnati. Particular attention will be given to the special municipal problems involved in the contemporary development of the city, and to the relations existing between its government and the government of the state of Ohio and Hamilton County. *Second semester*, T., Th., 2:00-3:00. Professor Brooks.

15. **Modern Philanthropy.**—A study of the problems of charity and penology. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. Problems of crime. The criminal, jails, prisons, reformatories, and preventive agencies. Proposed reforms. Readings, visits to charitable and penal institutions or other field work, reports. M., W., 2:00-3:00.
Professor Brooks.

17. **Selected Readings and Field Work.**—Designed to afford opportunity for the more thorough study of the subjects considered in the preceding courses, but may be elected separately by students who have already completed one full year's work either in the Department of Political and Social Science or in the Department of Economics. Special attention will be given to bibliography, statistical presentation, and the preparation of reports in standard form. F., 2:00-3:00. Professor Brooks.

Course 17 is recommended for students who have elected Courses 4a, *5 (second semester), 11a, 12b, and 15. Credit, one or two hours.

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*Undergraduate course in Elementary Sociology.

PRIMARILY FOR GRADUATES.

3. **History of Political Ideas.**—A study of the development of political thought. The first part of the course will be devoted to a series of lectures on Oriental, Greek, Roman, and mediaeval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date will be studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times will receive attention. M., W., F., 2:00-3:00. Professor Brooks.

Omitted in 1909-10.

7. **Modern Social Theories.**—A study of the social theories of Comte, Mill, Spencer, Schaeffle, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, and others. Particular attention will be given to the consequences of the theories of these writers in the field of practical social reform. T., Th., 4:00-5:00.

Omitted in 1909-10. Professor Brooks.

19. **Seminary.**—Designed to give an opportunity for the detailed study of special problems in political and social science. The general topic for the first semester will be the great movements in the field of legislation and popular opinion during the nineteenth century. During the second semester contemporary Utopian literature and the probable drift of political and social thought in the near future will be considered. Students will be required to select some special subject falling within this field for detailed study. Reports on their work will be required at intervals and the results must be submitted in completed form before the end of the year. T., 4:00-6:00. Professor Brooks.

PSYCHOLOGY.

Professor Breese and Mr. Lurie.

The department occupies two rooms on the second floor of McMicken Hall. One of these rooms is devoted to the laboratory, which is equipped with the apparatus necessary for carrying out the typical experiments in experimental psychology. The aim of the courses in this department is to give a comprehensive account of the facts of mental life and the methods of investigating them, and to point out the stages of mental development in the race and in the individual. For teachers and those intending to teach there are offered special courses dealing particularly with mental development and the application of psychology to education.

FOR UNDERGRADUATES AND GRADUATES.

2. **Experimental Psychology.**—Laboratory course. M., W., F., 1:00-3:30. Professor Breese and Mr. Lurie.

6a. **Educational Psychology.**—The applications of psychology to education. *First semester.* M., W., F., 3:00-4:00.
Professor Breese.

PRIMARILY FOR GRADUATES.

3. **Research.** — Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. **Seminar.**—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged.
Professor Breese.

ROMANCE LANGUAGES.

Professor Liberma, Assistant Professor Umphrey.

Undergraduate Course 4, **French Literature in the Seventeenth Century**, Course 6, **Elementary Spanish**, and Course 7, **Elementary Italian**, are prerequisite to certain advanced courses in Romance Languages, as shown below.

FOR UNDERGRADUATES AND GRADUATES.

26. **Special Studies in French Literature of the Seventeenth Century.**—The life and writings of Molière. T., Th., 9:30-10:30.
Professor Liberma.

Course 26 is open to students who have passed in Course 4.

10. **Historical French Grammar.**—A study of the successive changes the French language has undergone in pronunciation, inflection and syntax. Handbook: Brunot, *Précis historique de la Grammaire française.* T., Th., 8:30-9:30.
Professor Liberma.

Course 10 is open to students who have passed in Course 4.

15. **Dante.**—The *Vita Nuova* (Barbi edition), the *Inferno* (Grandgent edition), and the *Purgatorio.* Lectures, collateral reading, and reports. T., Th., 10:30-11:30.
Professor Liberma.

Course 15 is open to students who have passed in Course 7.

22. **Spanish Literature in the Nineteenth Century.**—Selected texts and collateral reading; composition; lectures. The following representative works are read: Caballero, *La familia de Alvareda;* Valera, *El Commendador Mendoza;* Alarcón, *El Sombrero de tres picos;* Galdos, *Doña Perfecta;* Tamayo y Baus, *Un drama nuevo;* Zorilla, *Traidor, inconfieso, y martir;* Nuñez de Arce, *El Haz de lena;* Echegaray, *O locura ó santidad;* Espronceda, Bécquer, Campoamor, *Poesías escogidas.* T., Th., 10:30-11:30. Assistant Professor Umphrey.

Course 22 is open to students who have passed in Course 6.

24. **Special Studies in Modern French Literature.**—The life and writings of Lamartine. T., 4:00-6:00.
Assistant Professor Umphrey.

Course 24 is open to students who have passed in Course 4.

25a. Phonetics.—A general introduction to linguistic science, intended to furnish a basis for the study of philology and for the practical teaching of modern languages. A systematic description of the organs of speech, followed by an examination of the most important sounds in three or four modern languages, especially English, French, and German. A phonetic alphabet will be used, and students will be given practice in phonetic transcription. Half course, *first semester*. T., 2:00-4:00.

Assistant Professor Umphrey.

PRIMARILY FOR GRADUATES.

14. Early Spanish.—Phonology and inflections. *El Poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged.

Assistant Professor Umphrey.

Course 14 is open to students who have passed in Course 8 or 22.

16. History of Old French Literature, from the Origins to the end of the Fifteenth Century. Lectures and reports. F., 2:00-4:00. Professor Liberma.

Course 16 is open to students who have passed in Course 4.

19b. Provencal Language and Literature.—An examination of the phonetic laws underlying the transformation of Vulgar Latin into Provençal; reading of Provençal texts, especially the poetry of the Troubadours. Text-books: Carl Appel, *Provenzalische Chresthomatie* (2nd ed., Leipzig, 1902); Grandgent, *An Outline of the Phonology and Morphology of Old Provençal. Second semester*, T., 2:00-4:00. Assistant Professor Umphrey.

17. Seminary.—The sources of Molière's plays. Two credits. S., 10:30-12:30. Professor Liberma.

18. Latin and Romance Palaeography.—See under "Latin."

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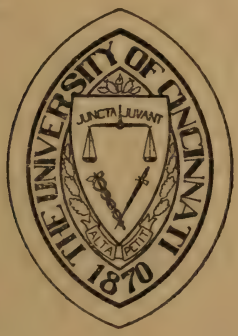
University of Cincinnati Record



Series I, Vol. VI, No. 4. JANUARY, 1910.

ANNOUNCEMENT OF

THE GRADUATE SCHOOL

1910—1911

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
AT THE UNIVERSITY PRESS,
BURNET WOODS, CINCINNATI, OHIO.

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THE UNIVERSITY OF CINCINNATI

COMPRISES THE FOLLOWING DEPARTMENTS:

I.

THE GRADUATE SCHOOL.

II.

THE McMICKEN COLLEGE OF LIBERAL ARTS.

III.

THE COLLEGE FOR TEACHERS.

IV.

THE COLLEGE OF ENGINEERING.

(Mechanical, Electrical, Civil, and Chemical Engineering.)

V.

THE COLLEGE OF LAW.

(The Cincinnati Law School.)

VI.

THE OHIO-MIAMI MEDICAL COLLEGE.

(The Ohio and the Miami Medical Colleges united.)

VII.

THE DEPARTMENT OF CLINICAL MEDICINE.

(The Clinical and Pathological School of the Cincinnati Hospital, Affiliated.)

For the special announcements of the various departments and further information, address:

THE SECRETARY OF THE UNIVERSITY,
CINCINNATI, OHIO.

OFFICERS OF ADMINISTRATION OF THE GRADUATE SCHOOL.

President of the University:
CHARLES WILLIAM DABNEY, Ph. D., LL. D.
Room No. 10, McMicken Hall.

Dean of the Graduate School:
JOSEPH E. HARRY, Ph. D.
Room No. 4, McMicken Hall.

Director of the Observatory:
JERMAIN G. PORTER, Ph. D.
The Observatory, Mt. Lookout.

Secretary of the University:
DANIEL LAURENCE, B. S.
Room No. 6, McMicken Hall.

Librarian of the University:
CHARLES ALBERT READ, A. B.
Van Wormer Library Building.

Registrar:
LELIA AMANDA GARVIN, B. L.
Room No. 7, McMicken Hall.

THE GRADUATE SCHOOL.

CALENDAR 1910-1911.

1910.

September 26, Monday:
First semester begins.

September 26, Monday-October 1, Saturday:
Registration days.

November 24, Thursday-November 26, Saturday:
Thanksgiving recess.

December 22, Thursday:
Christmas vacation begins.

1911.

January 2, Monday:
Work resumed.

January 23, Monday-January 28, Saturday:
First semester examinations.

January 28, Saturday:
First semester ends.

January 30, Monday-February 1, Wednesday:
Registration days for second semester.

January 31, Tuesday:
Second semester begins.

GENERAL INFORMATION.

FOUNDATION.

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869 the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874 the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin Street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University

in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati.

New departments were also added. In 1872 the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896 the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908 an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati." In 1896 a Law Department was established, and six professors of law were appointed, who gave instruction at first in rooms on Fourth Street. But, in 1897, by a contract with the Law School of the Cincinnati College (founded in 1833), a union was effected. The College of Law of the University was to be known as the Cincinnati Law School, and the degree of Bachelor of Laws was to be conferred by the concurrent action of the Board of Directors of the University and the Trustees of the Cincinnati College.

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in cooperation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head

*For this purpose the city levies annually a special tax of one-twentieth of one mill.

effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University —five-tenths of a mill, instead of three-tenths as before.

BUILDINGS AND SITE.

From 1875 to 1895 the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96 the north wing, known as Hanna Hall, was built for the departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Technical School building erected in 1901, has been completely remodeled to meet the needs of the College of Engineering. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. Since 1896 the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. The College of Law, on Ninth Street, occupies a new building, which was completed in 1902 at a cost of $65,000.

BENEFACTORS OF THE UNIVERSITY.

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Procter, Rev. Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Judge Moses F. Wilson, Eugene F. Bliss, Dr. James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, Rev. P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Charles Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue,

Professor Edward Miles Brown, Dr. Nathaniel Pendleton Dandridge, Mrs. Howard Breen, the alumni of the University, and others.

ENDOWMENT FUND ASSOCIATION.

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS.

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

Form of Bequest to University of Cincinnati:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

Form of Bequest to the Endowment Fund Association:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid

to the fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any questions relating to foundations to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY.

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The rooms have been furnished by the University with heavy tables and desks of quartered oak.

The University Library, in this building, contains about 55,000 volumes and 8,800 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The Library is provided with a card catalogue of its own books, and also with card catalogues of the books in the Public Library of Cincinnati and in the Library of the Historical and Philosophical Society of Ohio. It is open every week day from 8 a. m. to 5 p. m.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by Mr. Theodore A. Bruehl.

The Wilson Library, consisting mainly of works of literature and criticism, in English, French, and Italian, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Laura Seasongood Alcove contains books purchased annually from the proceeds of an endowment provided in 1894 by the will of the late Laura Seasongood.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown and presented to the University by Mrs. Edward Miles Brown, consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has deposited its valuable collections of books, pamphlets, and other articles in the Van Wormer Library of the University. This Library comprises over 23,000 volumes and 68,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts.

The total number of books in the Van Wormer Library Building is about 84,000 volumes and 77,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Law	11,000 volumes
The Library of the College of Medicine	3,000 volumes
The Library of the Cincinnati Hospital	18,309 volumes
Total	35,809 volumes

The libraries of the University then, taken altogether, but excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 90,809 volumes and 8,800 pamphlets.

The Public Library, of 438,767 volumes; the Mercantile Library, containing about 76,000 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum, and the College of Music, are open to University students.

UNIVERSITY PUBLICATIONS.

The University publishes the following periodicals at the University Press:

The University of Cincinnati Record,

Published monthly, from October to June inclusive. Its numbers include

The Annual Catalogue.
The Announcement of the Graduate School.
The Announcement of the McMicken College of Liberal Arts.
The Announcement of the College for Teachers.
The Announcement of the College of Engineering.
The Announcement of the College of Law.
The Announcement of the College of Medicine.
The President's Annual Report,

and other pamphlets of special information. Any number of the *Record* will be sent free of charge upon application to the Secretary of the University.

The University Studies,

Issued bi-monthly, is a scholarly publication, containing the results of research by members of the faculty or by other persons connected with the University of Cincinnati.

A price list of the literary and scientific publications of the University may be had by addressing the Office of the Press.

LABORATORIES.

The laboratory facilities offered in Botany, Zoology, Physiology, Histology, Physics, Chemistry, Psychology, Geology, and in the Engineering departments are equaled by few institutions in the West. The industries of the city afford abundant opportunity for the observation of the most recent scientific processes applied to manufacturing.

MUSEUMS.

The Museum of Natural History is located on the fourth floor of McMicken Hall, and consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time; the Balke natural history collections, consisting chiefly of mammals, birds, and insects; the Huntington collection of shells; the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous rocks; the Wetherby collection of rocks and

minerals; and lastly, a series of specimens illustrating the chemical industries. The department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks and fossils. Among recent valuable additions are the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch. I. Carson; and several group mounts of large animals by the Custodian of the Museum. A skillful collector and tax dermist is at present engaged in completing collections of local material.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of Michel Angelo's "Twilight," the Praxitelean "Diana of Gabii," "Ajax," "Hector and Andromache," "Venus de Medici," "The Boy and Goose," "Psyche of Capua," "Diana of Versailles," and "Hero." Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, Corinth, and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

Students of the classics and of industrial art derive much profit from the collections of the Cincinnati Art Museum; the Museum of the Society of Natural History and the Zoological Garden are utilized extensively for practical instruction in biological science; the Indian remains and mounds near the city are important for the study of archæology and history. Courses in schools of music and fine art, for which Cincinnati is noted, are frequently combined with University work.

THE ALLIANCE FRANÇAISE.

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in cooperation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students at the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of $300 in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

THE UNIVERSITY SETTLEMENT.

The Settlement conducted by the University of Cincinnati was organized in the year 1899. In May of that year a Settlement Association was formed, and in September a house, situated on Liberty and Plum Streets, in one of the most densely populated districts in Cincinnati, was opened, and at present is in full operation.

This house has become the social and educational headquarters of the neighborhood, and is frequented by the people from the surrounding tenement houses. A competent head-resident, ably seconded by his wife, directs the work. Various clubs are led by volunteer workers from the University and city and enjoy the social and educational privileges of the Settlement. Some of the features of the Settlement are a gymnasium, a circulating library, a reading room, a savings bank, and a lecture and entertainment course. It has, besides, a large sewing-school and several cooking-classes. A clinic is conducted each afternoon and a district nurse gives her whole time to the neighborhood work. Thus it furnishes an excellent experiment station for those who wish to do work in practical sociology. Students of the three upper classes doing regular work at the Settlement are given credit by the department of Political and Social Science.

This work is under the supervision of a Board of Directors, upon which serve representatives from the Faculty of the McMicken College of Liberal Arts, from the Alumnal Association, from the students of the University, and from business men of the city.

THE GRADUATE CLUB.

The members of the Graduate School have organized a Graduate Club, the object of which is to promote social intercourse, the encouragement of wider learning and research, the creation of an intellectual atmosphere, and the advancement of all the interests of the University of Cincinnati.

EXPENSES—BOARDING PLACES.

For the session of nine months the expenses of a student in the Graduate School will hardly be less than $325.00, nor need they be more, at a liberal estimate, than $450.00. A directory of suitable boarding places in the vicinity of the University Campus may be found in the Secretary's office. The rates for board and lodging vary from $4.50 to $7.00 a week. A schedule of University fees, which vary in proportion to the amount of work elected, may be found on page 22 of this announcement.

The Secretary of the University will make every effort to secure employment in the city for students who desire to support themselves wholly or in part while attending the University.

GRADUATE SCHOOL.

FACULTY.

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Civics.

HARRIS HANCOCK, Ph. D., Dr. Sc., Professor of Mathematics.

*JOHN MILLER BURNAM, Ph. D., Professor of Latin.

MAX POLL, Ph. D., Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.

MERRICK WHITCOMB, Ph. D., Professor of History.

LOUIS TRENCHARD MORE, Ph. D., Professor of Physics.

MICHAEL FREDERIC GUYER, Ph. D., Professor of Zoology.

BURTIS BURR BREESE, Ph. D., Professor of Psychology.

WILLIAM PAXTON BURRIS, A. M., Professor of the History and Principles of Education.

JOHN WILLIAM HALL, A. M., Professor of Elementary Education.

STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.

NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.

MARCO F. LIBERMA, A. B., Professor of Romance Languages.

LAUDER WILLIAM JONES, Ph. D., Professor of Chemistry.

ROBERT CLARKSON BROOKS, Ph. D., Professor of Political Science.

GUY ALLAN TAWNEY, Ph. D., Professor of Philosophy.

————, Professor of English.

*Absent on leave in Europe, 1910-11.

OTHER OFFICERS.

GEORGE MOREY MILLER, A. M., Associate Professor of English.

HARRIS MILLER BENEDICT, A. M., Associate Professor of Biology.

JAMES EDMUND IVES, Ph. D., Associate Professor of Physics.

CLAUDE M. LOTSPEICH, Ph. D., Assistant Professor of German.

EMILIE WATTS McVEA, A. M., Assistant Professor of English.

GEORGE HENRY ALLEN, Ph. D., Assistant Professor of Latin.

ISAAC JOSLIN COX, Ph. D., Assistant Professor of History.

HARRY SHIPLEY FRY, Ph. D., Assistant Professor of Chemistry.

GEORGE WALLACE UMPHREY, Ph. D., Assistant Professor of Romance Languages.

FRANK WASHINGTON BALLOU, A. M., Assistant Professor of the History and Principles of Education.

JOHN JERMAIN PORTER, A. B., Assistant Professor of Metallurgy.

CHARLES NAPOLEON MOORE, Ph. D., Assistant Professor of Mathematics.

SAMUEL JAMES McINTOSH ALLEN, Ph. D., Assistant Professor of Physics.

MAX HENRY GOETTSCH, Ph. D., Assistant Professor of Industrial Chemistry.

EARL FREDERICK FARNAU, A. M., Instructor in Chemistry.

JOSEPH HENRY KINDLE, A. M., Instructor in Mathematics.

HARRY LEWIS WIEMAN, Ph. D., Instructor in Biology.

JAMES FRANCIS DILWORTH, A. M., Instructor in English History.

J. ERNEST CARMAN, B. S., Instructor in Geology.

STUDENTS, 1910-11.

(First semester.)

THE GRADUATE SCHOOL.

THE D. A. R. FELLOW IN AMERICAN HISTORY.

Mackzum, Henrietta Marie, St. Bernard, O..4612 Carthage Pike.
A. B., University of Cincinnati, 1909. (History.)

THE COLONIAL DAMES FELLOW IN OHIO VALLEY HISTORY.

Rover, Paul Philip, Cincinnati.....125 McMillan St.
A. B., University of Cincinnati, 1907. (History.)

THE HANNA FELLOW IN PHYSICS.

Rieman, Edward G., Cincinnati.....2287 Loth St.
A. B., University of Cincinnati, 1908. (Physics.)

THE TEACHING FELLOW IN BOTANY.

Lantis, Vernon, Cincinnati.....2115 Auburn Ave.
A. B., Miami University, 1909. (Biology.)

UNIVERSITY SCHOLARS.

Braam, Maximilian.....College Hill, O.
A. B., University of Cincinnati, 1906. (German.)

Carrington, Elizabeth Cabell, Cincinnati.....341 Forest Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Foster, Joseph Buck, Cincinnati .....Lane Seminary.
A. B., Delaware College. (Political Science.)

Johnson, George Morton.....Blue Ash, O.
A. B., Wooster University, 1895; A. M., Wooster University, 1898. (Education.)

Revill, Jonette, Covington, Ky.....83 W. 11th St.
A. B., Georgetown College, 1909. (English.)

Shine, Mary Lambert, Covington, Ky.....1129 Madison Ave.
A. B., University of Cincinnati, 1902; A. M., University of Cincinnati, 1902. (History.)

GRADUATE STUDENTS.

Allgaier, Jennie, Cincinnati.....2921 Werk Rd.
A. B., University of Cincinnati, 1901. (English.)

Andriessen, Emma, Cincinnati.....116 Parker St.
A. B., University of Cincinnati, 1908. (German.)

Babbitt, Hildegarde M., Cincinnati.....Camden Ave.
A. B., University of Cincinnati, 1909. (Political Science.)

Bauer, Samuel G., Cincinnati.....1733 Fairfax Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Bauer, Stanley M., Cincinnati.....1733 Fairfax Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Beckett, Roy, Covington, Ky.....1041 Madison Ave.
B. L., Georgetown College, 1907. (History.)

Bentley, Mary Julia, Cincinnati.....3471 Evans Place.
A. B., University of Cincinnati, 1898. (Latin.)

Box, Cora M., Cincinnati.....275 McGregor Ave.
A. B., University of Cincinnati, 1904. (Biology.)

Bergman, Erick Frank, Cincinnati.....212 Calhoun St.
A. B., University of Cincinnati, 1908. (German.)

Black, Robert L., Cincinnati.....Baker Pl., Madison Rd.
A. B., Yale University, 1903; LL. B., Yale Law School, 1906. (English.)

Bloom, Irving Mortimer, Cincinnati.....203 Albany Ave.
A. B., Columbia University, 1908. (English.)

Braun, Annette Frances, Cincinnati.....2702 May St.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Biology.)

Breece, Arthur Eugene, Cincinnati....The Helena, Burnet Ave.
A. B., Ohio Wesleyan University, 1887. (Mathematics.)

Buchanan, Jessie Leila, Norwood, O.....3918 Spencer Ave.
A. B., Western College, 1908. (Greek.)

Burnet, Whittier, Cincinnati.....3609 Mathers St.
Ph. B., Ohio State University, 1903. (Latin.)

Campbell, Joseph Bailey, Covington, Ky.....2119 Oakland Ave.
A. B., Chicago University, 1905. (Education.)

Clopper, Edward Nicholas, Cincinnati.....The Beechwood.
B. S., Bethany College, 1897. (Social Science.)

Corcoran, Effie, Cincinnati.....241 Piedmont Ave.
A. B., University of Cincinnati, 1909. (History.)

Cramer, William Gustavus, Cincinnati.....The Westmoreland.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1909. (German.)

Davis, Ella, Cincinnati.....550 Prospect Place.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1909. (Economics.)

Davis, James Monroe, Cincinnati.....1703 Kinney Ave.
A. B., Ohio Wesleyan University, 1896. (Education.)

Dickoré, Marie Paula, Cincinnati.....3530 Beechmont Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (History.)

Dilley, Frank Brown, College Hill, O.....1511 Linden Ave.
A. B., Miami University, 1907. (Physics.)

Donnelly, Alice Moore, Cincinnati.....4307 Hamilton Ave.
B. L., University of Cincinnati, 1890. (Greek.)

Dunham, Amelia Hickenlooper, Cincinnati...2503 Auburn Ave.
A. B., University of Cincinnati, 1902. (English.)

Evans, Roberta Daniell, Norwood, O.....2335 Harper Ave.
A. B., University of Cincinnati, 1909. (English.)

Evans, William Andrew, Newport, Ky.....828 Washington Ave.
B. S., Denison University, 1906. (Chemistry.)

Farnau, Earl F., Covington, Ky.....20th & Scott Sts.
A. B., University of Cincinnati, 1905; A. M., University of Cincinnati, 1907. (Chemistry.)

Findley, Margaret Anne, Cincinnati.....319 Ludlow St.
B. L., University of Cincinnati, 1899. (Economics.)

Fouse, William Henry, Covington, Ky.....33 E. 9th St.
A. B., Otterbein University, 1893. (Education.)

Geismar, Siegfried, Cincinnati.....Albany Ave.
A. B., University of Cincinnati, 1908. (German.)

Gosling, Thomas Warrington, Cincinnati.....558 Evanswood.
A. B., Yale University, 1894; A. M., Yale University, 1904. (English Language, English Literature, and Romance Languages.)

Guethlein, Emma, Cincinnati.....743 E. Ridgeway Ave.
A. B., University of Cincinnati, 1909. (English.)

Hansen, Mrs. Hermine Zipperlen, Cincinnati.....Glencoe Hotel.
B. L., University of Cincinnati, 1898; A. M., University of Cincinnati, 1909. (German.)

Harvey, Gertrude Fay, Bond Hill, O.....1203 Woodland Ave.
A. B., University of Cincinnati, 1900. (Greek.)

Hathaway, Edward S., Cincinnati.....125 Saunders St.
A. B., University of Cincinnati, 1909. (Biology.)

Hecker, Charles, Cincinnati.....130 Calhoun St.
Ch. E., University of Cincinnati, 1909. (Chemistry.)

Henley, Ruth, Cincinnati.....423 Rockdale Ave.
A. B., Smith College, 1909. (History.)

Hoban, May Belle, Cincinnati.....1363 Myrtle Ave.
A. B., University of Cincinnati, 1903. (English.)

Homburg, Emil, Cincinnati.....104 W. Clifton Ave.
A. B., University of Cincinnati, 1902; A. M., University of Cincinnati, 1909. (Chemistry.)

Howell, Sara Jean, Cincinnati.....2611 Ashland Ave.
A. B., University of Cincinnati, 1900. (English.)

Ihrig, Roscoe Myrl, Cincinnati.....2147 St. James Ave.
Ph. B., Wooster University, 1901; Ph. M., University of Chicago, 1909. (German.)

Isaacs, Nathan Tovio, Cincinnati.....702 W. 9th St.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Economics.)

Jenkins, Alexander Lewis, Cincinnati.....2350 Ohio Ave.
B. M. E., State College of Kentucky, 1904; M. M. E., University of Cincinnati, 1907. (Mathematics.)

Johnson, Pliny Andrew, Cincinnati.....1727 Hewitt Ave.
A. B., University of Cincinnati, 1901; A. M., University of Cincinnati, 1907. (Education.)

Kersting, Emma Sophia, Cincinnati.....145 Saunders St.
A. B., University of Cincinnati, 1904. (Mathematics.)

Kiely, Ellen Elizabeth, Cincinnati.....420 Broadway.
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1908. (History.)

Kindle, Joseph Henry, Cincinnati.....224 W. Liberty St.
A. B., Ohio State University, 1905; A. M., Ohio State University, 1907. (Mathematics.)

Kinsella, Arthur James, Cincinnati.....2613 Ashland Ave.
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1908. (Latin.)

Kohnky, Emma, Cincinnati.....Crown and Essex Place.
A. B., University of Cincinnati, 1909. (Psychology.)

Kohnky, Frances, Cincinnati.....Crown and Essex Place.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1909. (Psychology.)

Kreimer, Edith, Cincinnati.....1826 Freeman Ave.
A. B., University of Cincinnati, 1909. (French.)

Lamdin, Lucy M., Cincinnati.....The Glencoe.
B. L., University of Cincinnati, 1894. (English.)

Lanz, Lea Blanche, Cincinnati.....548 Ridgeway Ave.
A. B., University of Cincinnati, 1908. (History.)

Latz, Charles Benjamin, Cincinnati.....878 Rockdale Ave.
A. B., University of Cincinnati, 1909. (Philosophy.)

Lazaron, Morris S., Cincinnati, Highland Ave. and McMillan St.
A. B., University of Cincinnati, 1909. (Philosophy.)

Leist, Amelia A., Norwood, O.....4012 Elsmere Ave.
A. B., University of Cincinnati, 1907. (German.)

Levi, Isabelle Juliet, Bellevue, Ky.....106 Van Voast Ave.
A. B., University of Cincinnati, 1909. (Education.)

Levi, Ruth E., Cincinnati.....532 Prospect Place.
A. B., University of Cincinnati, 1909. (Psychology.)

Loeb, Florence, Cincinnati.....829 Rockdale Ave.
A. B., University of Cincinnati, 1909. (Education.)

Loebman, Elise Reis, Cincinnati.....524 Hickman St.
A. B., University of Cincinnati, 1909. (Economics.)

Lotspeich, Mrs. Helen Gibbons, Cincinnati.....The Delmoor.
Student, University of Leipsic, 1900-1902. (German.)

Lotze, Erna Magdalen, Cincinnati.....733 Ridgeway Ave.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1909. (German.)

McCombs, Ethel Roberta, Ft. Thomas, Ky.....Bivouac Ave.
A. B., Wellesley College, 1909. (Education.)

McNelly, Nanabel, Cincinnati.....241 W. McMillan St.
A. B., University of Cincinnati, 1907. (Mathematics.)

Mack, Edward, Cincinnati.....Lane Seminary.
A. B., Davidson College, 1886; A. M., Davidson College, 1887. (Philosophy.)

Meitus, Joseph, Cincinnati.....512 Armory Ave.
Gymnasium, Elizabeth-Grad, Russia; M. D., Ohio Medical College, 1895. (Biology.)

Mitchell, Williams Carleton, Cincinnati.....4795 Morse St.
A. B., Lebanon College, 1889; B. D., Drew Seminary, 1893. (Economics.)

Oesper, Ralph Edward, Cincinnati.....2117 Langdon Ave.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1909. (Chemistry.)

Parker, Mrs. Harriet Lewis, Cincinnati.....4169 Hamilton Ave.
B. L., Bucknell University, 1894. (Philosophy.)

Parker, William Hammond, Cincinnati.....4169 Hamilton Ave.
Ph. B., Bucknell University, 1897. (Economics, Political Science.)

Peaslee, Leon D., Cincinnati.....2356 Ohio Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Biology, Geology.)

Plaut, Emma Jeanette, Cincinnati.....3547 Bogart Ave.
A. B., University of Cincinnati, 1904. (Economics.)

Porter, John J., Cincinnati.....1342 Meier Ave.
A. B., University of Cincinnati, 1908. (Chemistry.)

Rabenstein, Matilda Agnes, Cincinnati....2816 Highland Ave.
A. B., University of Cincinnati, 1896; A. M., University of Cincinnati, 1899. (German.)

Roettinger, Elisabeth.....Wyoming, O.
A. B., Wells College, 1898. (English.)

Rosenberg, Adolph, Cincinnati.....612 Richmond St.
Gymnasium, Frankfurt, and University of Giessen. (Philosophy.)

Rowell, Mary E., Cincinnati.....849 Hutchins Ave.
A. B., University of Cincinnati, 1907. (Mathematics.)

Rubin, Joseph Maccabee, Palo Alto, Calif. & 2239 Frances Lane.
A. B., University of Wisconsin, 1908. (Philosophy.)

Ruecker, August, Cincinnati.....937 McPherson Ave.
B. D., Hartford Theological Seminary, 1907; Graduate Student, Ohio State University, 1909. (Philosophy.)

Russell, Francis M., Cincinnati.....Ashland and Myrtle Aves.
A. B., University of Cincinnati, 1904; A. M., University of Cincinnati, 1906. (Biology.)

Sanders, Ethel, Cincinnati.....2918 Montana Ave.
A. B., University of Cincinnati, 1907. (History.)

Schroerlucke, Laura Louise, Cincinnati.....Du Casse Hotel.
A. B., University of Cincinnati, 1909. (Mathematics.)

Seat, Elizabeth F., Norwood, O.....4534 Lafayette Ave.
A. B., Mary Sharp College, 1882. (English.)

Selbert, Louis, Cincinnati.....3514 Bevis Ave.
A. B., University of Cincinnati, 1909. (Romance Languages.)

Shinkle, Lulu Edith, Cincinnati.....Dennison Hotel.
A. B., Oxford College, 1909. (German.)

Shorten, Lauretta Quarry, Cincinnati.....24 San Rafael.
A. B., University of Cincinnati, 1908. (English.)

Siehl, Benjamin H., Cincinnati.....2220 Ohio Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Siehl, Charles Frederick, Cincinnati.....Lyon & Clifton Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Simrall, Josephine Price, Cincinnati.....Hedgerow Lane.
B. S., Wellesley College, 1893. (English.)

Spiegel, Grace, Cincinnati.....820 Laurel St.
A. B., University of Cincinnati, 1908. (English.)

Smith, Alfred, Cincinnati.....Ring Pl.
A. B., Wittenberg College, 1907. (Chemistry.)

Smith, Eliot, Cincinnati.....3384 Erie Ave.
A. B., University of Minnesota, 1903. (Physics.)

Smith, Joy Kelsey, Cincinnati.....20 E. 8th St.
A. B., Oberlin College, 1909. (English.)

Steinau, Irene Amberg, Cincinnati.....3123 Woodburn Ave.
A. B., University of Cincinnati, 1909. (History.)

Tangeman, Horace F., Cincinnati.....1605 E. McMillan St.
A. B., Miami University, 1908. (History.)

Thomas, Mrs. Alma Holdt, Cincinnati.....2626 May St.
A. B., University of Cincinnati, 1900. (German.)

Thorndyke, Elizabeth F., Cincinnati.....3535 Bevis Ave.
A. B., University of Cincinnati, 1909. (History.)

Trimble, James Rolf, Cincinnati.....224 W. Liberty St.
A. B., Harvard University, 1906. (Mathematics.)

Umphrey, Mrs. Gertrude Smith, Cincinnati.....The Rutland.
A. B., University of Michigan, 1905. (Romance Languages.)

Wise, Isaac Meyer, Cincinnati.....3816 Dakota Ave.
A. B., University of Cincinnati, 1908. (Philosophy.)

Wolf, Jane Esther, Cincinnati.....3241 Jefferson Ave.
A. B., University of Cincinnati, 1906. (Romance Languages.)

Wood, Milo N., Cincinnati.....2442 Ohio Ave.
Ph. B., Adrian College, 1904. (Philosophy.)

Wurtz, Louise B., Cincinnati.....3025 Beekman St.
A. B., University of Cincinnati, 1904. (Latin.)

Yowell, Everett I., Cincinnati.....Corbett & Griest Sts.
C. E., University of Cincinnati, 1891; M. S., University of Cincinnati, 1893. (Astronomy.)

Total.....115

INFORMATION FOR STUDENTS.

ADMISSION.

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School.

Students entering the Graduate School should apply to the Dean of the Graduate School, during the first week of either the first or second semester, between the hours of 9 and 12 A. M. If not a graduate of this university the applicant should be prepared to give proof of his academic degree or degrees, and should afford evidence of the character of the courses he has taken in the college from which he has been graduated. On the presentation of satisfactory credentials a card of admission to the Graduate School will be issued to the applicant. Students will not be admitted to the Graduate School after the third week of the semester.

FEES IN THE GRADUATE SCHOOL.

All fees must be paid in *advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Dean is authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

Library Fee.—All graduate students are charged a library fee of five dollars per year.

Tuition.—Tuition is free to residents of Cincinnati. Graduate students not residents of the city are charged tuition at the rate of three dollars per credit hour. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to nine dollars a semester or eighteen dollars per year. All tuition fees are payable in advance.

Laboratory Fees.

Geology, five dollars per semester, in advance.
Psychology, five dollars per semester, in advance.
Biology, ten dollars per semester, in advance.
Physics, ten dollars per semester, in advance. (Five dollars per semester, in advance, for a laboratory course of one period a week.)
Chemistry, fifteen dollars per semester, in advance.

A deposit of fifteen dollars at the opening of the semester is required of all students taking Chemistry, to insure the University against loss by breakage in the Chemical Laboratory. This

deposit will be returned at the end of the year after deductions have been made for breakage.

A student who elects a laboratory course shall not be permitted to enter such a course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Diploma Fees.—A diploma fee of ten dollars is required of those who receive the Master's degree and twenty dollars of those who receive the Doctor's degree. This fee must be paid at least two weeks before the day appointed for conferring the degree. If for any reason the degree is not conferred the fee will be returned.

INSTRUCTION.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In order to receive the Master's degree the candidate must have completed satisfactorily courses representing twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

For the Doctor's degree three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his

college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate, at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German, and shall be required to complete forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING.

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree.

All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE.

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS.

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarships carry a stipend of from one hundred to five hundred dollars. (See list given below.) The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

FOUNDATIONS.

In the year 1900 the Daughters of the American Revolution established a Fellowship in American History, yielding an income of $100 per year.

In the year 1904 the Alliance Française of the city of Cincinnati established a Scholarship of $300, to be awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

In the year 1906 the Society of Colonial Dames established a Fellowship in Ohio Valley History of the value of $300 a year.

In the same year Mrs. Henry Hanna and Miss Mary Hanna established a Fellowship in Physics, in honor of Mr. Henry Hanna. The value of this fellowship is $500 a year.

COURSES OF INSTRUCTION.

ASTRONOMY.

Professor Porter.

The Cincinnati Observatory, constituting the astronomical department of the University, is situated on Mount Lookout. The grounds comprise about thirteen acres. On the highest point stands the main building, surmounted by a thirty-foot dome. This dome houses the new equatorial, built by the Alvan Clark and Sons' Corporation. The diameter of the objective is sixteen inches, and the focal length slightly over twenty feet. The instrument is equipped with driving clock, micrometer, electric lighting, and other devices requisite for convenient manipulation. The magnifying powers range from 80 to 800.

In the western wing is placed the meridian circle by Fauth and Co. This instrument has an aperture of five inches and a focal length of seventy inches. The circle is divided to five minutes of arc, and read by four microscopes to single seconds. The eastern wing is used as a library and computing room.

A clock vault in the basement contains the new Riefler standard and secondary clocks, the latter synchronized with the former, and this in its turn controlling two dials placed in the transit room and dome.

A smaller observatory, named the O. M. Mitchel Building, in honor of the original founder of the institution, has been erected for the reception of the eleven-inch equatorial. The Observatory possesses also a four-inch equatorial by Clark, a sidereal chronometer by Bond, a chronograph by Fauth, and a mean-time clock by Ritchie. The library contains about 3,500 volumes, including most of the star catalogues and many valuable works of reference.

The scientific activity of the Observatory has been uninterrupted since the removal in 1873 to the present site. During this period sixteen numbers of the regular publications have been issued, besides many memoirs which have appeared in the astronomical journals. Special prominence is given to stellar astronomy, many important discoveries having been made in this field. The Observatory is also cooperating at the present time with the International Geodetic Association in the determination of the variation of latitude.

FOR UNDERGRADUATES AND GRADUATES.

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's

Theoretical Astronomy. First semester; hours to be arranged.
Professor Porter.

5b. Computation of a parabolic orbit from three observations, and of an elliptic orbit with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester;* hours to be arranged.
Professor Porter.

Courses 4a and 5b are given at the Observatory.

*BIOLOGY.

Professor Guyer, Associate Professor Benedict, Dr. Wieman.

To pursue advanced courses in biology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES.

To enter upon work for the degree of Master of Arts in zoology students must have completed courses 1a, 2a, 3b, 4b, 10b, 15a, 16a, 17b, 18b, or their equivalents. Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who elect their majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology. The requirements for a higher degree, when biology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 23).

LABORATORIES.

The Biological Department occupies the east half of the basement and the second and third floors of Cunningham Hall. The fixtures have been carefully designed to meet all of the requirements of modern biological work, and the laboratories are well provided with optical apparatus and the various instruments of biological technique. Besides these, a liberal supply of more special appliances is at the service of the investigator. Special laboratories are provided for students taking advanced courses and courses of research.

FOR UNDERGRADUATES AND GRADUATES.

15a. Embryology of Vertebrates.—Lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal

* For a statement of the undergraduate courses prerequisite to advanced work in Biology, see the announcement of the McMicken College of Liberal Arts.

organs of the body. This course must be accompanied by Course 16a. *First semester*, M., W., F., 10:30-11:30. Dr. Wieman.

Course 15a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 15a and 19a are given in alternate years; 15a is given in 1910-11.

16a. **Embryology, Laboratory.**—The work is based largely on the frog, chick, and pig. *First semester*, M., W., 1:00-4:00. Dr. Wieman.

Course 16a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 16a and 20a are given in alternate years; 16a is given in 1910-11.

17b. **Vertebrate Zoology and Comparative Anatomy.**—Lectures on the anatomy, classification, habits, and distribution of vertebrates, to be accompanied by a study of the living forms in the field and at the Zoological Garden. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester*, M., W., F., 10:30-11:30. r. Wieman.

Course 17b is open to students who have passed in Courses 15a and 16a.

Courses 17b and 21b are given in alternate years; 17b is given in 1910-11.

18b. **Comparative Anatomy of Vertebrates, Laboratory.**—The work consists in the careful dissection and study of selected forms. *Second semester*, M., W., 1:00-4:00. r. Wieman.

Course 18b is open to students who have passed in Courses 15a and 16a.

Courses 18b and 22b are given in alternate years; 18b is given in 1910-11.

19a. **Animal Histology.**—Lectures and recitations upon the microscopic structure of tissues and organs. This course must be accompanied by Course 20a. *First semester*, M., W., F., 10:30-11:30. Dr. Wieman.

Course 19a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 19a and 15a are given in alternate years; 19a is omitted in 1910-11.

20a. **Animal Histology, Laboratory.**—Practical studies on the microscopic anatomy of animal tissues and organs. *First semester*, M., W., 1:00-4:00. Dr. Wieman.

Course 20a is open to students who have passed in Courses 1a, 2a, 3b, 4b.

Courses 20a and 16a are given in alternate years; 20a is omitted in 1910-11.

21b. **Physiology.**—Discussion of the fundamental principles of physiology and their application to the human body. This

course must be accompanied by Course 22b. *Second semester*, M., W., F., 10:30-11:30. Dr. Wieman.

Course 21b is open to students who have passed in Courses 19a and 20a.

Courses 21b and 17b are given in alternate years; 21b is omitted in 1910-11.

22b. **Physiology, Laboratory.**—The student is required to perform the classical experiments on blood, circulation, respiration, absorption, muscle and nerve, central nervous system, and sense organs. *Second semester*, M., W., 1:00-4:00. Dr. Wieman.

Course 22b is open to students who have passed in Courses 19a and 20a.

Courses 18b and 22b are given in alternate years; 22b is omitted in 1910-11.

23. **Field Work.**—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three hour course. Hours to be arranged. Associate Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany or zoology.

24a. **Plant Histology.**—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester*, T., 10:30-11:30. Associate Professor Benedict.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

25a. **Plant Histology, Laboratory.**—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester*, M., W., 1:00-4:00. Associate Professor Benedict.

26b. **The Reproduction and Embryology of the Spermatophytes.**—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester*, T., 10:30-11:30.

Associate Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

27b. **Reproduction of the Angiosperms.**—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 26b. *Second semester*, M., W., 1:00-4:00.

Associate Professor Benedict.

PRIMARILY FOR GRADUATES.

30. Current Problems in Biology.—Assigned readings and discussions to accompany courses of research. A reading knowledge or French or German is required. Th., 4:00-6:00.
Dr. Wieman.

31. Research.—Hours to be arranged.
Professor Guyer and Associate Professor Benedict.

32a. Anatomy and Physiology of the Cell; Non-Developmental Phenomena.—Lectures on the structure and function of cells other than the germ cells. *First semester*, M., W., 4:00-5:00.
Professor Guyer.

33b. Anatomy and Physiology of the Cell; the Germ Cell.—Lectures dealing with the cell from the viewpoint of development and inheritance. *Second semester*, M., W., 4:00-5:00.
Professor Guyer.

34. Cytology, Laboratory.—A laboratory course intended to serve as an introduction to cytological technique and to the general field of cellular biology. Each student is assigned a special problem. T., Th., 1:00-4:00. Professor Guyer.

*CHEMISTRY.

Professor Jones, Assistant Professor Fry, Assistant Professor Porter, Assistant Professor Goettsch, Mr. Farnau.

PREFATORY.

There never was a period when chemistry touched the various sciences and the demands of practical life at so many points as it does at the present time. This manifold relationship has made it necessary to arrange courses in chemistry which may be sufficiently varied to suit the requirements of many classes of students. A choice of consecutive courses may be made by students who are taking chemistry as a disciplinary study, and with a desire to complete a general education. Many courses have been offered which have a definite and intimate relationship to the industrial activities of modern life. Furthermore, a number of specialized courses of an advanced character have been announced to give the proper training to those students who may wish to carry on graduate work in the nature of research leading to a Master's or a Doctor's degree. For all advanced

* For a statement of the undergraduate courses prerequisite to advanced work in Chemistry, see the announcement of the McMicken College of Liberal Arts.

work in chemistry students must acquire a reading knowledge of German and French very early in the course, since an acquaintance with these languages is assumed in the later work.

EQUIPMENT.

The Department of Chemistry occupies quarters in Hanna Hall Annex and the first floor of Hanna Hall. The main laboratories are devoted to general inorganic chemistry, elementary organic chemistry, qualitative and quantitative analysis. There are special laboratories arranged for courses in organic, physical, and technical chemistry. A thoroughly equipped laboratory has been provided for advanced metallurgical work. Several private laboratories are provided for instructors, and for graduate students who are engaged in research. The laboratories are open from 8.30 a. m., to 5 p. m. on every working day except Saturday, when they close at 1:00 o'clock. Concerning the laboratory fees and special deposit, see page 22.

THE LIBRARY.

A departmental library, comprising about 2,000 volumes, has quarters on the first floor of Hanna Hall. It contains complete series of the important periodicals in English, German, French, and Italian, and a large number of the current journals of chemistry are kept on file. The standard hand-books and works of reference, and many special and technical works of recent publication are available. Treatises necessary for advanced work or research work will be obtained to meet the particular needs of students pursuing such work.

SPECIAL REQUIREMENTS FOR HIGHER DEGREES.

The Degree of Doctor of Philosophy.

Candidates for the degree of Doctor of Philosophy must have a broad preparation in the fundamental branches of chemistry. The character of this training can be defined best by reference to the list of courses under "A" below. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12, 13. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the following courses in accordance with their choice, before receiving the degree:

(a) *Inorganic Chemistry*: 10b, 11b, 21 (one semester); 17 (one semester); and ten credit hours elected from Courses 14a, 15a, 16a, 20, 24, 28b, 34, 35b.

(b) *Organic Chemistry*: 20, 21, 35b, 17 (one semester); and ten credit hours elected from Courses 10b, 11b, 14a, 18, 24, 28b, 34.

(c) *Physical Chemistry*: 10b, 20, 34, 17 (one semester); and ten credit hours elected from Courses 14a, 19a, 11b, 21, 24, 28, 35b.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12 and 13 (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree.

The Department of Chemistry requires that at least sixteen of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail upon a subject suggested by the instructor under whose direction the student has been placed.

FOR UNDERGRADUATES AND GRADUATES.

10b. **Advanced Inorganic Chemistry.**—Three exercises a week during the second semester. In this course the less familiar elements and compounds and the more recent theories of inorganic chemistry are discussed. T., Th., S., 8:30-9:30.
Assistant Professor Goettsch.

Prerequisite: Courses 5a, 6, and 7b.

11b. **Inorganic Preparations.**—Three laboratory exercises a week during the second semester. Preparation of specimens of inorganic compounds. M., W., F., 1:00-4:00.
Assistant Professor Goettsch.

Prerequisite: Course 7b.

12. **Physical Chemistry.**—Lectures and recitations. A general introductory course of three exercises a week throughout the year. T., Th., S., 11:30-12:30. Mr. Farnau.

Prerequisite: Courses 5a, 6, and 7b; Physics, 1 year; Math. 5.

13. Physical Chemistry, Laboratory.—Two exercises a week throughout the year, illustrating the general static and dynamic methods of physical and electro-chemistry. This course must be accompanied by Course 12. Th., F., 1:00-4:00. Mr. Farnau.

Prerequisite: Same as Course 12.

20. Advanced Organic Chemistry.—Lectures, embracing a systematic study of the principles and practice of organic chemistry, and treating of the modes of formation, properties, reactions, and constitution of typical members of the most important classes of organic compounds. T., Th., S., 9:30-10:30.
Professor Jones.

Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. This course requires considerable reading in the journals of chemistry and in various hand-books and works of reference. M., W., F., 1:00-4:00. Professor Jones.

Prerequisite: As in Course 20.

24. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter, and considers the development of the fundamental laws of the science of chemistry Special attention is directed to the classical memoirs of the Greek Philosophers, the tenets of the Alchemists, and those researches of the past century that have developed the Atomic and Structure Theories of modern chemistry. Lectures, collateral readings and papers. M., Th., 4:00-5:00. Assistant Professor Fry.

Prerequisite: 5a, 6, 8a and 9a, or 20 and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two periods a week. Hours to be arranged.
Professor Jones.

Prerequisite: 5a, 6, 8a, 9a; Physics, 1 year.

PRIMARILY FOR GRADUATES.

30. Research.—This course requires at least eight periods of laboratory work per week under the direction of some instructor in the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d). Professor Jones, Assistant Professor Fry,
Assistant Professor Porter, Assistant Professor Goettsch.

34. Mathematical Chemistry.—A study of the application of exact and approximate mathematics in physical science. Two periods a week. Hours to be arranged. Mr. Farnau.

Prerequisite: Chemistry 12, 13; Math. 8a, 9b.

35b. **Some Special Problems and Theories of Organic Chemistry.**—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration are chosen from the following: optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpines; tautomerism; the polypeptides, proteins, etc. *Second semester.* Two hours a week, to be arranged.

Professor Jones.

40. **Journal Club Meetings.**—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS.

(The Sinton Professorship.)

Professor Hicks.

Undergraduate Course 1, **Economics**, is prerequisite to certain courses, as shown below.

FOR UNDERGRADUATES AND GRADUATES.

2a. **Economic History.**—A study of the industrial development of society since the tenth century. The subjects considered include the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times, together with the problems arising therefrom. *First semester*, T., Th., 11:30-12:30. Professor Hicks.

3b. **Economic History of the United States.**—The economic development of the United States from 1789 to the present: territorial expansion and growth of population; extractive industries, especially agriculture and mining; manufactures; trade, domestic and foreign; transportation facilities: canals, railroads, and the merchant marine; experiments in money and banking; tariff; industrial corporations and trusts; labor and labor organizations; and government regulation of industry. *Second semester*, T., Th., 11:30-12:30. Professor Hicks.

4. **Current Economic Problems.**—The following subjects are studied during 1910-11:

(a) First semester: tariff, money, and banking.

(b) Second semester: public finance. M., W., 3:00-4:00.

Professor Hicks.

Course 4 is open to students who have had Course 1 or Course 6.

5. **Selected Readings.**—The primary purpose of this course is to afford opportunity for more extended study of the subjects considered in the preceding courses, but it may be taken by those who desire to pursue systematic reading in the field of economics, provided they are prepared to enter upon such work with profit. Special attention is given to the literature of the topic selected. F., 11:30-12:30 or 3:00-4:00. Professor Hicks.

Course 5 is recommended to students who have elected Course 1, 2a, 3b, or 4. Credit, one or two hours.

PRIMARILY FOR GRADUATES.

6. **Economic Theory.**—An advanced course in the elements of economics. The work consists in a comparative study of the views of representative economists. M., 4:00-6:00.
Professor Hicks.

7. **Seminary.**—Opportunity is here given for the detailed study of specific problems in economics. Credit according to work done. W., 4:00-. Professor Hicks.

EDUCATION.

Professor Burris, Professor Hall, Assistant Professor Ballou.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, **History and Principles of Education,** is prerequisite to certain advanced courses in Education, as shown below.

Education 3. Principles and Problems of Secondary Education.—This course is intended especially for advanced students and teachers who contemplate appointment to high school positions. The first part of the course considers the principles of secondary education, with special reference to those derived from the psychology of adolescence. The second part of the course will be devoted to a critical consideration of the problems of high school organization, with special reference to courses of study, relative values of studies, and methods of instruction.

Those who have not had college courses in psychology and the history of education must obtain special permission from the Dean of the College for Teachers before registering for the course. T., 3:00-5:00, throughout the year.
Assistant Professor Ballou.

Omitted in 1910-11.

PRIMARILY FOR GRADUATES.

Education 5. Philosophy of Education.—Lectures, required readings, and discussions. The first part of the course presents an integrated view of the facts of the various sciences having educational significance, for the purpose of arriving at a philosophical definition of education as a whole. The second part of the course will deal with the organization of elementary education as determined by its philosophical meaning thus derived, and as modified by practical considerations. In appropriate connections there will be special consideration of the

process of education as world building. The historical and logical origin, meaning, and classification of studies will be briefly considered. Special attention will be given to the question, what happens when we try to know, and to the place of symbolism and systems of imitational and inventional expression in education. Credit will be given only to those who take the course throughout the year. S., 8:30-9:30, throughout the year.
Professor Burris.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. M., 4:00-6:00. Professor Burris.
Omitted in 1910-11.

Education 17. Educational Classics.—An advanced course in the history of education. From year to year it will consist of a critical study of the more important writings of "Great Educators" of special periods. For the year 1910-11 the period covered will be the nineteenth century. Open to those who have passed in Education 1 or its equivalent. W., 4:00-6:00, throughout the year. Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Place of meeting to be arranged. W., 4:00-6:00, throughout the year.
Professor Hall.

ENGLISH.

Professor ———, Associate Professor Miller,
Assistant Professor McVea.

FOR UNDERGRADUATES AND GRADUATES.

7a. Old English Prose.—An elementary reading course in Old English, the texts being taken from Bright's *Anglo-Saxon Reader. First semester,* M., W., F., 10:30-11-30.
Professor ———.

Course 7a is prerequisite to Courses 8b and 9, and is required of all students who choose English as a major subject. Further conditions for a major in English may be satisfied by Courses 8b and 9.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester,* M., W., F., 10:30-11:30.
Professor ———.

9. English Literature from the Conquest to the Death of Chaucer.—In the first semester selected works are read (Emerson, *Middle English Reader*) which illustrate the development of English literature and the English language before Chaucer. The second semester will be devoted to the life and works of Chaucer. Th., 3:00-5:00. Professor ———.

Course 9 is given in alternate years; it is given in 1910-1911.

12. **Literary Composition.**—This course considers the various prose literary forms from the point of view of original composition. Only those students are admitted to the course who satisfy the instructor of their ability to write well. Hours to be arranged. Assistant Professor McVea.

14. **The English Drama before Shakspere.**—The origins of the English drama and its earlier manifestations in miracle plays, moralities, and interludes are studied. M., W., F., 11:30-12:30. Associate Professor Miller.

17. **Literary Criticism.**—The development of English literary criticism from Ascham to Pater, with a brief discussion of American literary criticism and of the characteristics of criticism as a literary form. T., Th., 3:00-4:00.
Associate Professor Miller.

19b. **The English and Scottish Popular Ballads.**—A study of the characteristics of folk-poetry and of the origin and development of the popular ballad. *Second semester*, T., Th., 9:30-10:30.
Associate Professor Miller.
Omitted in 1910-11.

FOR GRADUATES ONLY.

20. **English Seminary.**—Subject and hours to be announced.
Professor ————.

GEOLOGY AND GEOGRAPHY.

Professor Fenneman and Mr. Carman.

The Department of Geology and Geography occupies the fourth floor of McMicken Hall, except a part of the space used for a museum of zoology and geology. A general laboratory is used for work with maps and fossils and for work with hand specimens of rocks and minerals, with only such apparatus and reagents as may be carried in the field. A laboratory for determinative mineralogy and another for microscopic petrography are equipped with appliances and instruments of the most modern type.

A seminar room contains the departmental library and current geologic and geographic periodicals, together with all reference maps, topographic, geologic, and geographic, belonging to the department. Graduate students may be allowed private desks in the petrographic laboratory, which communicates with the seminar room. A lecture room, seating thirty-six students, is equipped with a stereopticon of the highest grade and with the customary models and illustrative material.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 2, **General Geology**, is prerequisite to Courses 5b and 9, as shown below.

5b. **Field Geology and Survey Methods.**—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party.

Mr. Carman.

Course 5b is open to those who have had Course 2 and may be taken in connection with the second half of that course.

7. **Mineralogy.**—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Three hours; to be announced.

Professor Fenneman.

8. **Introductory Paleontology.**—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized. Three hours; to be announced. Mr. Carman.

9. **Historical Geology.**—The rock formations of each geologic period, chiefly in North America, studied in historical order; their description, geographic distribution, and explanation; physical conditions and events attending the formation of each as known from its character and fossils; life development and faunal migrations. Three hours; to be announced. Mr. Carman.

Course 2 is prerequisite.

10. **Paleontology.**—A continuation of Course 8. Assignments of work are made to each student individually and are determined by the material available and the wishes of the student. Credit according to work done; hours to be arranged.

Mr. Carman.

12. **Petrology.**—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Hours to be arranged.

Professor Fenneman.

Course 7 is prerequisite.

13. **Special Work in Geology.**—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to the value of the work.

GERMAN.

Professor Poll and Assistant Professor Lotspeich.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 4, **Introduction to German Literature of the Eighteenth Century** is prerequisite to certain advanced courses, as shown below.

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1910-11: *An Anthology of German Literature*, by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina*, and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00. Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30. Professor Poll.

Omitted in 1910-11.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30. Professor Poll.

PRIMARILY FOR GRADUATES.

12. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. Th., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

Omitted in 1910-11.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. Th., 4:00-6:00. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

Omitted in 1910-11.

7. Middle High German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. W., 4:00-6:00. Assistant Professor Lotspeich.

8. Old High German.—Braune's *Althochdeutsche Grammatik*, and the same author's *Althochdeutsche Lesebuch* are used as text-books. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00. Assistant Professor Lotspeich.

13. **Gothic**—Braune's *Gotische Grammatik;* reading of selections from Ulfilas; lectures on Germanic philology. M., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1910-11.

26. **Old Norse.**—Kahle's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1910-11.

35. **History of German Literature to the Nineteenth Century.**—This will be substantially the same as Course 5, slightly rearranged, however, to meet the needs of teachers. T., 4:00-6:00. Professor Poll.

9. **German Seminary.**—Critical study of Wolfram's *Parzival.* Th., 4:00-6:00. Professor Poll.

Omitted in 1910-11.

GREEK.

Professor Harry.

Many casts of works of antique art have been installed in the Greek room and in the corridors of the University. Students in both undergraduate and graduate courses also have opportunities to study the casts in the Cincinnati Art Museum.

FOR UNDERGRADUATES AND GRADUATES.

13. **Greek Art.**—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. T., 10:30-11:30. Professor Harry.

The class is limited to twenty-five students.

PRIMARILY FOR GRADUATES.

5. **Rapid Reading in the Historians.**—W., 3:00-4:00. Professor Harry.

6. **Practical Exercises in Greek.**—F., 3:00-5:00. Professor Harry.

7. **Greek Seminary.**—The Historians (1910-11); Plato (1911-12). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY.

Professor Whitcomb, Assistant Professor Cox, Mr. Dilworth.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 1, Middle Ages-Renaissance; Course 3, **Reformation-Revolution-Napoleon;** Course 13, **Political History of England;** and Course 15, **General Course in American**

History, are prerequisite to certain advanced courses in History, as shown below.

25. **European History Since 1814.**—An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization. T., Th., 10:30-11:30. Professor Whitcomb.

Open to students who have passed in Course 3.

30. **American Colonial History.**—This course touches upon certain features of the Spanish and French colonial systems, and then considers in detail the English colonial establishments in America, the struggle between the English and French for the control of the continent, and the development of American institutions during the colonial régime. Lectures, with collateral readings and special reports. T., Th., 1:00-2:00. Assistant Professor Cox.

Omitted in 1910-11.

31. **American Revolutionary History.**—The course traces in outline the main features of the Anglo-American and Spanish-American revolutionary movements from 1763 to the announcement of the Monroe Doctrine in 1823. Lectures, with collateral readings and special reports. T., Th., 4:0-5:00. Assistant Professor Cox.

Open to advanced students and teachers.

32. **History of the Middle Period.**—A history of American expansion and internal development from the second war with Great Britain to the close of 1853. T., Th., 1:00-2:00. Assistant Professor Cox.

33. **The Civil War and Reconstruction.**—The course includes a survey of the causes of the Civil War and a review of the main features of the great sectional contest and of the Reconstruction period. Lectures, wih collateral reading and special reports. T., Th., 4:00-5:00. Assistant Professor Cox.

Omitted in 1910-11.

38. **American Territorial Diplomacy.**—The course reviews the claims of various European nations to the American continent, and is followed by a detailed study of the diplomatic and frontier questions involved in the territorial expansion of the United States. M., W., F., 8:30-9:30. Assistant Professor Cox.

Open to those who have had Course 15 or its equivalent.

Omitted in 1910-11.

21. **American Constitutional History.**—The course treats of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. M., W., F., 8:30-9:30. Assistant Professor Cox.

Open to those who have had Course 13 or 15.

40. **English Constitutional History.**—The course traces the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 11:30-12:30.

Omitted in 1910-11. Mr. Dilworth.

44a. **English History Since 1856.**—This course deals with the political, economic, and religious history of England since the close of the Crimean War and with the present day problems. *First semester*, T., Th., 11:30-12:30. Mr. Dilworth.

Course 44a is open to students who have passed in Course 13 or Course 25, or who have obtained the consent of the instructor.

45b. **European Law in its Historical Development.**—This course includes a survey of the great systems of law which have prevailed in Europe since the disintegration of the Roman Empire. The Germanic Codes, the Canon Law, the Law Merchant, and the attempts at modern codification are treated. Special attention is given to the law of the Middle Ages. While this course may appeal to students who intend to engage in the study and practice of law, it is believed that it will be of interest to the more general student of European civilization. *Second semester*, T., Th., 11:30-12:30. Mr. Dilworth.

Course 45 is open to students who have passed in Course 1 or who have obtained the consent of the instructor.

PRIMARILY FOR GRADUATES.

34. **Seminary in European History.**—The Period of the Early Revolution, 1789-1791. The working out of a new political and economic system for France. The proceedings of the National Assembly will be read, requiring the ability to read French prose. Exercises in bibliography and method. This course may be elected only after a consultation. Two hours a week; to be arranged. Professor Whitcomb.

39. **Seminary in American History.**—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. Two hours per week; S., 10:30-12:30. Assistant Professor Cox.

41. **Seminary in Medieval History.**—The work of the class will center about the reading of a chronicle. Reports, based on source material. Ability to read either French or German required. Period to be arranged. Mr. Dilworth.

Course 41 is open to properly qualified seniors.

8a. **History of the Development of Spanish and Spanish-American Institutions.**—The history of Spanish institutions from the fifth century to the discovery of America. Lectures, with reports by the students based upon available sources. *First semester*. Two hours a week; to be arranged.

Assistant Professor Allen, assisted by
Assistant Professors Umphrey and Cox.

Open by special permission to seniors and juniors who have had Course 1.

8b. History of the Development of Spanish and Spanish-American Institutions, Continued.—An outline of the discovery and exploration of Spanish America, with an account of the development of typical institutions in the New World. Lectures, with reports based on collateral readings. A reading knowledge of Spanish is desirable. *Second semester.* Two hours a week; to be arranged. Assistant Professor Cox, assisted by Assistant Professors Allen and Umphrey.

Open to those who have had Course 1 or Course 15.

LATIN.

***Professor Burnam and Assistant Professor Allen.**

The work, while not neglecting the philological side of the subject, will emphasize more and more, as the student progresses, its historical and humanitarian aspect. The University Library has the beginning of a fair special collection, chiefly devoted to the authors most read in the course. After the second year the seminary method will be used as far as possible. The students in Palaeography will find some MSS. and a considerable collection of facsimiles and treatises at their disposal.

PRIMARILY FOR GRADUATES.

Hours in all cases to be arranged.

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century. Students will have abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires a reading knowledge of French and German.

Omitted in 1910-11.

10. Latin Seminary.—Cicero. Lectures; reports and papers on special topics. Attention will be directed mainly to the orations and to the political and legal institutions of the time. Three hours. Assistant Professor Allen.

24. Medieval Latin.—The interpretation of selected Latin in texts dealing with the history and institutions of the Middle Ages. *Second semester.* Two hours.
Assistant Professor Allen.

12. Graduate Study.—Credit according to work done.
Assistant Professor Allen.

8a. History of the Development of Spanish and Spanish-American Institutions.—The history of Spanish institutions from the fifth century to the discovery of America. Lectures and reports based upon an examination of the Latin source material. This course is intended to serve as preparation for original

*Absent on leave in Europe, 1910-1911.

investigation of Latin medieval texts. *First semester.* Two hours a week. Assistant Professor Allen, assisted by Assistant Professors Cox and Umphrey.

Open to seniors and juniors by special permission.

8b. Course 8a will be continued during the second semester as Course 8b in the department of History (see page 43).

*MATHEMATICS.

Professor Hancock, Professor Slocum, Assistant Professor Moore, Mr. Kindle.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 5, **Calculus, Differential and Integral,** is prerequisite to certain advanced courses, as shown below.

6a. Advanced Analytical Geometry of Two Dimensions.—C. Smith, *Conic Sections.* Lectures. M., W., F., 10:30-11:30, *first semester.* Mr. Kindle.

Course 6a is open to graduate students and to those who have passed in Course 5.

7b. Analytical Geometry of Three Dimensions.—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry.* Lectures, M., W., F., 10:30-11:30, *second semester.* Mr. Kindle.

Course 7b is open to graduate students and to those who have passed in Course 5.

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 10:30-11:30. Assistant Professor Moore.

Omitted in 1910-11.

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.* Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations* Lectures. M., W., F., 9:30-10:30, *second semester.* Professor Hancock.

PRIMARILY FOR GRADUATES.

31. Theory of Numbers.—Algebraic Numbers.—Part I. Dedekind's theory. T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

30. Theory of Numbers — Natural Numbers. — Lectures founded on the Berlin lectures of Kronecker, Frobenius, and Dirichlet's Zahlentheorie. T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

Omitted in 1910-11.

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* See courses in Applied Mathematics, College of Engineering.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. M., 4:00-5:00; Th., 4:00-6:00, *first semester.*
Professor Slocum.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lame's functions, with applications to problems in heat, electricity, potential, elasticity, etc., M., 4:00-5:00; Th., 4:00-6:00, *second semester.*
Professor Slocum.

28. Theory of Functions.—Lectures on the theory of functions of real variables. M., W., F., 9:30-10.30.
Assistant Professor Moore.

29. Theory of Functions.—Lectures on the theory of functions of a complex variable. Hours to be arranged.
Assistant Professor Moore.

16a. Theoretical Mechanics.—A modern treatment of analytical mechanics intended especially for advanced students in engineering and physics. The course is given by lectures, supplemented by references to standard texts. *First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

Given in 1910-11; omitted in 1911-12.

16b. The Mathematical Theory of Elasticity.—A course in the mechanics of elastic bodies, supplementary to Course 16a. The course is given mainly by lectures, supplemented by references to the works of Williamson, Webster, and A. E. H. Love. *Second semester,* M., 4:00-5:00; Th., 4:00-6:00.
Professor Slocum.

Given in 1910-11; omitted in 1911-12.

26a. The History and Teaching of Mathematics.—A course in the pedagogy of mathematics, based chiefly on the historical development of the subject. Modern pedagogical theories are studied in their relation to mathematics and used as a basis for the discussion of laboratory and other special methods of instruction. *First semester,* Th., 4:00-6:00; S., 9:30-10:30.
Professor Slocum.

Omitted in 1910-11.

24. Elliptic Integrals and Elliptic Functions.—The theories of Legendre, Abel, Jacobi, and of Riemann, Hermite, Weierstrass. Lectures founded on the Berlin lectures of Fuchs, Schwarz, and Weierstrass. T., 4:00-6:00; S., 10:30-12:30.
Professor Hancock.

Omitted in 1910-11.

25. Application of Elliptic Functions.—The general theory of Course 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and

surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.
Omitted in 1910-11.

20. **Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.**—Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.
Omitted in 1910-11.

18a. **Theory of Minimal Surfaces.**—The developments of Lie, Darboux, Schwarz, and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester*. Professor Hancock.
Omitted in 1910-11.

19b. **The Extended Realms of Rationality.**—Lectures. T., Th., S., 8:30-9:30, *second semester*. Professor Hancock.
Omitted in 1910-11.

FOR GRADUATES ONLY.

30. **Seminary.**—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to work done. Hours by special arrangement. Professor Slocum.

PHILOSOPHY.

Professor Tawney.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate courses 1a, **Logic**, and 2b, **Introduction to Philosophy**, are prerequisite to certain advanced courses in Philosophy, as shown below.

3a. **Ancient and Medieval Philosophy.**—An historical and critical account of the typical world-views of ancient Greece and Rome, together with a brief study of the course of philosophical and scientific thought in the Middle Ages. This course is of interest to undergraduates chiefly because the philosophical speculations of youth and of the untrained masses of people are found in this period of history. *First semester*, M., W., F., 9:30-10:30. Professor Tawney.

Course 3a is open to students who have completed at least one year of University work.

4b. **Modern Philosophy.**—An historical account of the transition from medieval to modern philosophy; the beginnings of scientific freedom, followed by a study of the intellectualism and empiricism of the seventeenth century; the critical philosophy of Kant; transcendentalism in Germany, England, and America; agnosticism and positivism; the evolution philosophy; absolute idealism, realism, and pragmatism. *Second semester*, M., W., F., 9:30-10:30. Professor Tawney.

Course 4b is open to students who have completed at least one year of University work. Students are advised to take either 2b or 3a before entering 4b.

5a. Ethics.—This is an introductory study of the moral ideas and institutions of man with some reference to the relation between morality on the one side, and political and ecclesiastical sanctions on the other. It begins with the origin and growth of morality in the race and the individual, and includes some account of the moral problem of our present society. *First semester*, M., W., F., 11:30-12:30. Professor Tawney.

Course 5a is open to students who have completed at least two years of University work.

6b. Political Philosophy.—A study of the principles of political organization, including the origin of the state, the relation of morality to legislative enactment, the concepts of natural law, natural right, the general will, and the rule of majorities. *Second semester*, M., W., F., 11:30-12:30. Professor Tawney.

Course 6b is open to students who have completed at least two years of University work.

8b. Principles of Science and the Theory of Scientific Method. This course begins with a rapid review of Course 1a and includes an outline of the method of science in general and special study of the methods of special groups of sciences, such as the mathematics, biology, physics, psychology. Some reference will be made to relations between the scientific method and the method of judgment in other than scientific fields. *Second semester;* three hours, to be arranged. Professor Tawney.

Prerequisite: Course 1a.

PRIMARILY FOR GRADUATES.

7. Types of Epistemology and Metaphysics.—A critical study of idealism, realism, agnosticism, and pragmatism as exemplified in the writings of modern, chiefly nineteenth century writers: T. H. Green, F. H. Bradley, Josiah Royce, William James. John Dewey, Herbert Spencer, Auguste Comte, Lotze, G. E. Moore, Woodbridge, and others. Two hours, throughout the year. Th., 11:30-1:30. Professor Tawney.

Omitted in 1910-11.

9. Ethical and Epistemological Problems.—A study of the problems of ethics and epistemology from the standpoint of evolution. Two hours, to be arranged. Professor Tawney.

Prerequisite: Courses 1a, 3a, and 4b, or their equivalents.

10. English Empiricism in the Eighteenth Century.—A study of the most important of the philosophical works of Hobbes, Locke, Berkeley, and Hume, with especial reference to their influence on nineteenth century thought. Two hours, to be arranged. Professor Tawney.

Prerequisite: Courses 3a and 4b, or their equivalents.

12a. Philosophical Method.—A study of the logic of certain typical philosophical tendencies and of the group of philosophical disciplines. The theme of the course might be called the methodology of reflection. *First semester*, W., 8:30-9:30, 10:30-11:30. Professor Tawney.

Omitted in 1910-11.

PHYSICS.

Professor More, Associate Professor Ives,
Assistant Professor Allen, Mr. Evens.

The Department of Physics occupies the first floor and the the larger part of the basement of Cunningham Hall. The former contains lecture and recitation rooms, offices, library and general laboratories. In the basement are the shops and a number of small rooms fitted for advanced work.

The department is supplied with modern apparatus for illustrating lectures, and for both general and advanced laboratory work. The stock is also being largely increased. A skilled mechanician is employed in making and repairing apparatus. Every facility will be offered students requiring specially constructed apparatus.

The library of the department contains the best works in Physics, and the important journals are on file.

FOR UNDERGRADUATES AND GRADUATES.

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. Professor More.
Omitted in 1910-11.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. Professor More.
Omitted in 1910-11.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester.* Three times weekly. Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester.* Three times weekly. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Three times weekly. Professor More.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. S., 8:30-1:00. Mr. Evens.

Omitted in 1910-11.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester*, twice weekly. Assistant Professor Allen.

17a. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *First semester*. Twice weekly.
Associate Professor Ives.

FOR GRADUATES ONLY.

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1910-11 the lectures discuss the theory of heat and generalized coordinates; 1911-12, light; 1912-13, electricity and magnetism. Twice weekly.
Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and the assistance of the Mechanician is at their disposal. Daily.
Professor More, Associate Professor Ives,
and Assistant Professor Allen.

POLITICAL AND SOCIAL SCIENCE.

Professor Brooks.

FOR UNDERGRADUATES AND GRADUATES

4b. Political Parties and Party Problems.—A study of the organization, methods, and aims of existing political parties in the United States. The following subjects will be discussed: theory of the party system, primary and convention system, permanent party organization, the financing of parties, elements of cohesion in parties, and the principal recent aims pursued by political parties. *Second semester*, T., Th., 2:00-3:00.
Professor Brooks.

7a. Modern Sociology.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Schaeffle, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, and others. Particular attention is given to the consequences of the theories of these writers in the field of practical social reform. *First semester*, T., Th., 2:00-3:00. Professor Brooks.

11a. Municipal Government.—A comparative study of municipal government in the principal countries of Europe, England, and the United States, with particular reference to the reforms advocated in the latter country. Special financial and social problems of city life, such as municipal ownership, taxation of unearned increment, the drift of population to urban centers, the housing problem, sanitation, provision of facilities for recreation, the child problem in cities, etc., are also discussed. *First semester*, T., Th., 1:00-2:00. Professor Brooks.

12b. **The Government of Cincinnati.**—A somewhat detailed study of the organization and functions of the government of Cincinnati. Particular attention is given to the special municipal problems involved in the contemporary development of the city, and to the relations existing between its government and the government of the state of Ohio and Hamilton County. *Second semester*, T., Th., 1:00-2:00. Professor Brooks.

15. **Modern Philanthropy.**—A study of the problems of charity and penology. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. Problems of crime. The criminal, jails, prisons, reformatories, and preventive agencies. Proposed reforms. Readings, visits to charitable and penal institutions or other field work, reports. M., W., 2:00-3:00. Professor Brooks.

17. **Selected Readings and Field Work.**—Designed to afford opportunity for the more thorough study of the subjects considered in the preceding courses, but may be elected separately by students who have already completed one full year's work either in the Department of Political and Social Science or in the Department of Economics. Special attention will be given to bibliography, statistical presentation, and the preparation of reports in standard form. F., 2:00-3:00. Professor Brooks.

Course 17 is recommended for students who have elected Courses 4a, 5* (second semester), 11a, 12b, and 15. Credit, one or two hours.

PRIMARILY FOR GRADUATES.

3. **Seminary in the History of Political Ideas.**—A study of the development of political thought. The first part of the course is devoted to a series of lectures on Oriental, Greek, Roman, and mediaeval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date are studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times receive attention. M., 3:15-5:15. Professor Brooks.

PSYCHOLOGY.

Professor Breese and Mr. Lurie.

The department occupies two rooms on the second floor of McMicken Hall. One of these rooms is devoted to the laboratory, which is equipped with the apparatus necessary for carrying out the typical experiments in experimental psychology. The aim of the courses in this department is to give a comprehensive account of the facts of mental life and the methods of investigating them, and to point out the stages of mental development in the race and in the individual. For teachers and those intending to teach there are offered special courses dealing particularly with mental development and the application of psychology to education.

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* Undergraduate course in Elementary Sociology.

FOR UNDERGRADUATES AND GRADUATES.

2. **Experimental Psychology.**—Laboratory course. M., W., F., 1:00-3:30. Professor Breese and Mr. Lurie.

6a. **Educational Psychology.**—The applications of psychology to education. *First semester.* M., W., F., 3:00-4:00. Professor Breese.

PRIMARILY FOR GRADUATES.

3. **Research.**—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. **Seminar.**—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged. Professor Breese.

ROMANCE LANGUAGES.

Professor Liberma, Assistant Professor Umphrey.

FOR UNDERGRADUATES AND GRADUATES.

Undergraduate Course 11, **French Literature in the Nineteenth Century,** Course 6, **Elementary Spanish,** and Course 7, **Elementary Italian,** are prerequisite to certain advanced courses in Romance Languages, as shown below.

4. **French Literature in the Seventeenth Century.**—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Warren, *French Prose of the Seventeenth Century;* Corneille, *Le Cid, Polyeucte;* Racine, *Andromaque, Phèdre;* Molière, *Précieuses ridicules, Le Misanthrope;* Boileau, *L'Art poétique;* La Fontaine, *Fables,* T., Th., 9:30-10:30. Professor Liberma.

Course 4 open to students who have passed in Course 11.

8. **Spanish Literature in the Sixteenth and Seventeenth Centuries.**—Cervantes, *Don Quijote*; selected plays of Lope de Vega and Calderón. History of Spanish Literature from the age of Juan II. to the Bourbons. T., Th., 10:30-11:30. Assistant Professor Umphrey.

Course 8 is open to students who have passed in Course 6.

29. **Italian Literature in the Eighteenth and Nineteenth Centuries.**—Lectures. Selections from Goldoni, Alfieri, Parini, Manzoni, Carducci, and others. T., Th., 9:30-10:30. Assistant Professor Umphrey.

Course 29 is open to students who have taken Course 7 or its equivalent.

10. **Historical French Grammar.**—A study of the successive changes the French language has undergone in pronunciation, inflection and syntax. Handbook; Brunot, *Précis historique de la Grammaire française.* T., Th., 8:30-9:30. Professor Liberma.

Course 10 is open to students who have passed in Course 4.

13. **French Literature in the Eighteenth Century.**—Montesquieu, Voltaire, Diderot, J. J. Rousseau. Reading of selected works, lectures, reports. This course is given wholly in French. T., Th., 9:30-10:30. Professor Liberma.

Course 13 is open to students who have completed Course 4.

Omitted in 1910-11.

22. **Spanish Literature in the Nineteenth Century.**—Selected texts and collateral reading; composition; lectures. The following representative works are read: Caballero, *La familia de Alvareda;* Valera, *El Commendador Mendoza;* Alarcón, *El Sombrero de tres picos;* Galdos, *Doña Perfecta;* Tamayo y Baus, *Un drama nuevo;* Zorilla, *Traidor, inconfieso, y martir;* Nuñez de Arce, *El Haz de lena;* Echegaray, *O locura ó santidad;* Espronceda, Béquer, Campoamor, *Poesías escogidas.* T., Th., 10:30-11:30. Assistant Professor Umphrey.

Course 22 is open to students who have passed in Course 6.

Omitted in 1910-11.

15. **Dante.**—The *Vita Nuova* (Barbi edition), the *Inferno* (Grandgent edition), and the *Purgatorio.* Lectures, collateral reading, and reports. T., Th., 10:30-11:30.
Professor Liberma.

Course 15 is open to students who have passed in Course 7.

Omitted in 1910-11.

23. **French Literature of the Renaissance.**—A study of the more important writers of the period. Lectures and reports. T., Th., 8:30-9:30. Professor Liberma.

Course 23 is open to students who have had Course 4.

Omitted in 1910-11.

24. **Special Studies in Modern French Literature.**—The life and representative writings of Voltaire. T., 4:00-6:00.
Assistant Professor Umphrey.

Course 24 is open to students who have passed in Course 4.

25a. **Phonetics.**—A general introduction to linguistic science, intended to furnish a basis for the study of philology and for the practical teaching of modern languages. A systematic description of the organs of speech, followed by an examination of the most important sounds in three or four modern languages, especially English, French, and German. A phonetic alphabet will be used, and students will be given practice in phonetic transcription. Half course, *first semester.* T., 2:00-4:00.
Assistant Professor Umphrey.

PRIMARILY FOR GRADUATES.

12. **Old French.**—Old French phonology and inflections; versification. Lectures, text interpretation and collateral reading. F., 2:00-4:00. Professor Liberma.

Course 12 is open to students who have passed in Course 4.

14. Early Spanish.—Phonology and inflections. *El Poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged.
Assistant Professor Umphrey.

Course 14 is open to students who have passed in Course 8 or 22.

Omitted in 1910-11.

16. History of Old French Literature, from the Origins to the end of the Fifteenth Century. Lectures and reports. F., 2:00-4:00. Professor Liberma.

Course 16 is open to students who have passed in Course 4.

Omitted in 1910-11.

19b. Provencal Language and Literature.—An examination of the phonetic laws underlying the transformation of Vulgar Latin into Provençal; reading of Provençal texts, especially the poetry of the Troubadours. Text-books: Carl Appel, *Provenzalische Chrestomatie* (2d ed., Leipzig, 1902); Grandgent, *An Outline of the Phonology and Morphology of Old Provençal. Second semester*, T., 2:00-4:00. Assistant Professor Umphrey.

Omitted in 1910-11.

17. Seminary.—Studies in the technique and the sources of the French drama of the seventeenth century. Two credits. S., 10:30-12:30. Professor Liberma.

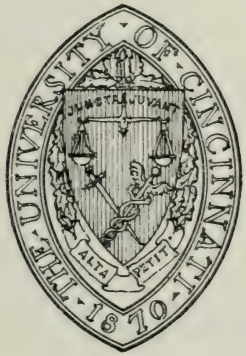
40a. History and Development of Spanish and Spanish-American Institutions.—The history of Spanish institutions from the fifth century to the discovery of America. Lectures. Reports by students upon original Spanish sources. This course is intended to prepare students for original investigation of medieval Spanish documents and other historical source material. *First semester*. Two hours a week; to be arranged.
Assistant Professor Allen, assisted by
Assistant Professors Cox and Umphrey.

40b. Course 40b will be continued during the second semester as Course 8b in the department of History (see page 43).

18. Latin and Romance Palaeography.—See Latin 9.

Series I. Vol. VII. No. 4.
JANUARY, 1911.

University of Cincinnati Record



ANNOUNCEMENT OF

THE GRADUATE SCHOOL

1911-1912

ISSUED MONTHLY FROM OCTOBER TO JUNE INCLUSIVE

PUBLISHED BY THE UNIVERSITY OF CINCINNATI,
AT THE UNIVERSITY PRESS,
BURNET WOODS, CINCINNATI, OHIO

THE UNIVERSITY OF CINCINNATI

Comprises the Following Departments:

I.
THE GRADUATE SCHOOL.

II.
THE McMICKEN COLLEGE OF LIBERAL ARTS.

III.
THE COLLEGE FOR TEACHERS.

IV.
THE COLLEGE OF ENGINEERING.
(Mechanical, Electrical, Civil, and Chemical Engineering.)

V.
THE COLLEGE OF LAW.
(The Cincinnati Law School.)

VI.
THE OHIO-MIAMI MEDICAL COLLEGE.
(The Ohio and the Miami Medical Colleges united.)

VII.
THE DEPARTMENT OF CLINICAL MEDICINE.
(The Clinical and Pathological School of the Cincinnati Hospital, Affiliated.)

For the special announcements of the various departments and further information, address:

THE SECRETARY OF THE UNIVERSITY,
CINCINNATI, OHIO.

OFFICERS OF ADMINISTRATION OF THE GRADUATE SCHOOL.

President of the University:
CHARLES WILLIAM DABNEY, Ph. D., LL. D.
Room No. 10, McMicken Hall.

Dean of the Graduate School:
JOSEPH E. HARRY, Ph. D.
Room No. 4, McMicken Hall.

Director of the Observatory:
JERMAIN G. PORTER, Ph. D.
The Observatory, Mt. Lookout.

Secretary of the University:
DANIEL LAURENCE, B. S.
Room No. 6, McMicken Hall.

Librarian of the University:
CHARLES ALBERT READ, A. B.
Van Wormer Library Building.

Registrar:
LELIA AMANDA GARVIN, B. L.
Room No. 7, McMicken Hall.

THE GRADUATE SCHOOL.

Calendar 1911-1912.

1911.

September 25, Monday:
First Semester begins.

September 25, Monday—September 30, Saturday:
Registration days.

November 30, Thursday—December 2, Saturday:
Thanksgiving recess.

December 21, Thursday:
Christmas vacation begins.

1912.

January 2, Tuesday:
Work resumed.

January 22, Monday—January 27, Saturday:
First semester examinations.

January 27, Saturday:
First semester ends.

January 29, Monday—January 31, Wednesday:
Registration days for second semester.

January 30, Tuesday:
Second semester begins.

April 1, Monday—April 6, Saturday:
Easter vacation.

GENERAL INFORMATION.

FOUNDATION.

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869 the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874 the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin Street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati.

New departments were also added. In 1872 the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896 the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908 an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati." In 1896 a Law Department was established, and six professors of law were appointed, who gave instruction at first in rooms on Fourth Street. But, in 1897, by a contract with the Law School of the Cincinnati College (founded in 1833), a union was effected. The College of Law of the University was to be known as the Cincinnati Law School, and the degree of Bachelor of Laws was to be conferred by the concurrent action of the Board of Directors of the University and the Trustees of the Cincinnati College.

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

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*For this purpose the city levies annually a special tax of one-twentieth of one mill.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as before.

BUILDINGS AND SITE.

From 1875 to 1895 the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96 the north wing, known as Hanna Hall, was built for the departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchell Building, was added in 1904 to house the old telescope. Since 1896 the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. The College of Law, on Ninth Street, occupies a new building, which was completed in 1902 at a cost of $65,000. A gymnasium, power plant, and engineering building, provided by the city, are now in the course of erection.

BENEFACTORS OF THE UNIVERSITY.

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Procter, Rev. Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Judge Moses F. Wilson, Eugene F. Bliss, Dr. James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, Rev. P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Charles Kilgour, C. H. Krippendorf, Julius Fleishmann, Lucien Wulsin, Samuel Pogue, Professor Edward Miles Brown, Dr. Nathaniel Pendleton Dandridge, Mrs. Howard Breen, Mr. Robert William Hochstetter, Mrs. R. N. Hollingshed, Mr. Davis L. James, Miss Catherine M. James, Miss Ellen W. James, Miss Annie A. James, Mr. and Mrs. O. J. Renner, the alumni of the University, and others. In 1910, the friends of Dr. Joseph Eichberg, for many years an eminent Professor of Physiology in the Miami Medical College, who lost his life through a lamentable accident in the summer of 1908, presented the University with the sum of $45,000, to establish in the University the Joseph Eichberg Chair of Physiology.

ENDOWMENT FUND ASSOCIATION.

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS.

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

Form of Bequest to the University of Cincinnati:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

Form of Bequest to the Endowment Fund Association:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any questions relating to foundation to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY.

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The library is open every week day from 8 A. M. to 5 P. M.

The University Library, in this building, contains about 60,000 volumes and 10,000 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the

current numbers of 300 periodicals. The library is provided with a card catalogue of its own books, and also with card catalogues of the books received since 1905, by the Public Library of Cincinnati.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by Mr. Theodore A. Bruehl.

The Wilson Library, consisting of works of English, French, and Italian literature, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown, was presented to the University by Mrs. Edward Miles Brown. It consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, at present about 600 volumes, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The library has many volumes on history and economics, purchased from the proceeds of an endowment provided in 1894 by the will of Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has rooms for its valuable collections of books, pamphlets, and other articles in the Van Wormer Library. This collection comprises over 24,000 volumes and 68,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts. Students of the University have access to this library and may withdraw books from it under certain conditions.

The total number of books, including duplicates, in the Van Wormer Library Building is about 90,000 volumes and 78,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Law	11,000 volumes
The Library of the College of Medicine	3,000 volumes
Total	17,500 volumes

The libraries of the University, excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 77,500 volumes and 10,000 pamphlets.

The Public Library, of 384,912 volumes; the Mercantile Library, containing about 78,625 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum, and the College of Music, are open to University students.

UNIVERSITY PUBLICATIONS.

The University publishes the following periodicals at the University Press:

The University of Cincinnati Record.

Published monthly, from October to June inclusive. Its numbers include:

The Annual Catalogue.
The Announcement of the Graduate School.
The Announcement of the McMicken College of Liberal Arts.
The Announcement of the College for Teachers.
The Announcement of the College of Engineering.
The Announcement of the College of Law.
The Announcement of the College of Medicine.
The President's Annual Report,

and other pamphlets of special information. Any number of the Record will be sent free of charge upon application to the Secretary of the University.

The University Studies,

Issued bi-monthly, is a scholarly publication, containing the results of research by members of the faculty or by other persons connected with the University of Cincinnati.

A price list of the literary and scientific publications of the University may be had by addressing the Office of the Press.

LABORATORIES.

The laboratory facilities offered in Botany, Zoology, Physiology, Histology, Physics, Chemistry, Psychology, Geology, and in the Engineering departments are equaled by few institutions in the West. The industries of the city afford abundant opportunity for the observation of the most recent scientific processes applied to manufacturing.

MUSEUMS.

The Museum of Natural History is located on the fourth floor of McMicken Hall, and consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds, and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous rocks; the Wetherby collection of rocks and minerals; and lastly, a series of specimens illustrating the chemical industries. The Department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks, and fossils. Among recent valuable additions are the U. P. James collection of fossils and minerals, the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch. I. Carson; and several group mounts of large animals by the custodian of the Museum.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of the "Winged Victory," "Aphrodite of Melos," "Faun Playing the Flute," "Esquiline Venus," "Capitoline Venus," and a pediment of the temple of Zeus at Olympia. Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures

of the Parthenon, Erechtheum, Acropolis, Corinth, and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

Students of the classics and of industrial art derive much profit from the collections of the Cincinnati Art Museum; the Museum of the Society of Natural History and the Zoological Garden are utilized extensively for practical instruction in biological science; the Indian remains and mounds near the city are important for the study of archæology and history. Courses in schools of music and fine art, for which Cincinnati is noted, are frequently combined with University work.

THE ALLIANCE FRANÇAISE.

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students of the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of $300 in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

THE UNIVERSITY SETTLEMENT.

The Settlement conducted by the University of Cincinnati was organized in the year 1899. In May of that year a Settlement Association was formed, and in September a house, situated on Liberty and Plum Streets, in one of the most densely populated districts in Cincinnati, was opened, and at present is in full operation.

This house has become the social and educational headquarters of the neighborhood, and is frequented by the people from the surrounding tenement houses. A competent head-resident, ably seconded by his wife, directs the work. Various clubs are led by volunteer workers from the University and city and enjoy the social and educational privileges of the Settlement. Some of the features of the Settlement are a gymnasium,

a circulating library, a reading room, a savings bank, and a lecture and entertainment course. It has, besides, a large sewing-school and several cooking-classes. A clinic is conducted each afternoon and a district nurse gives her whole time to the neighborhood work. Thus it furnishes an excellent experiment station for those who wish to do work in practical sociology. Students of the three upper classes doing regular work at the Settlement are given credit by the department of Political and Social Science.

In 1906 a summer home was erected at New Richmond, twenty miles above Cincinnati. This home is located on a high hill overlooking the Ohio River, and is accessible both by boat and by traction cars. During the summer season it is filled with women and children from the tenement district, who otherwise would not have an opportunity to benefit by the healthful, out of door, country life.

This work is under the supervision of a Board of Directors, upon which serve representatives from the Faculty of the McMicken College of Liberal Arts, from the Alumnal Association, from the students of the University, and from business men of the city.

THE GRADUATE CLUB.

The members of the Graduate School have organized a Graduate Club, the object of which is to promote social intercourse, the encouragement of wider learning and research, the creation of an intellectual atmosphere, and the advancement of all the interests of the University of Cincinnati.

EXPENSES—BOARDING PLACES.

For the session of nine months the expenses of a student in the Graduate School will hardly be less than $325.00; nor need they be more, at a liberal estimate, than $450.00. A directory of suitable boarding places in the vicinity of the University Campus may be found in the Secretary's office. The rates for board and lodging vary from $4.50 to $7.00 a week. A schedule of University fees, which vary in proportion to the amount of work elected, may be found on page 23 of this announcement.

The Secretary of the University will make every effort to secure employment in the city for students who desire to support themselves wholly or in part while attending the University.

GRADUATE SCHOOL.

FACULTY.

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Civics.

HARRIS HANCOCK, Ph. D., Dr. Sc., Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D., Professor of Latin.

MAX POLL, Ph. D., Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.

MERRICK WHITCOMB, Ph. D., Professor of History.

LOUIS TRENCHARD MORE, Ph. D., Professor of Physics.

MICHAEL FREDERIC GUYER, Ph. D., Professor of Zoology.

BURTIS BURR BREESE, Ph. D., Professor of Psychology.

WILLIAM PAXTON BURRIS, A. M., Professor of the History and Principles of Education.

JOHN WILLIAM HALL, A. M., Professor of Elementary Education.

STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.

NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.

LAUDER WILLIAM JONES, Ph. D., Professor of Chemistry.

ROBERT CLARKSON BROOKS, Ph. D., Professor of Political Science.

GUY ALLAN TAWNEY, Ph. D., Professor of Philosophy and Lecturer in Biblical Literature.

FRANK WADLEIGH CHANDLER, Ph. D., Professor of English and Ropes Professor of Comparative Literature.

PHILLIP OGDEN, Ph. D., Professor of Romance Languages.

PAUL GERHARDT WOOLLEY, B. S., M. D., Professor of Pathology.

MARTIN HENRY FISCHER, M. D., Joseph Eichberg Professor of Physiology.

HENRY McELDERRY KNOWER, Ph. D., Professor of Anatomy.

OTHER OFFICERS.

GEORGE MOREY MILLER, A. M., Associate Professor of English.

**HARRIS MILLER BENEDICT, A. M., Associate Professor of Biology.

JAMES EDMUND IVES, Ph. D., Associate Professor of Physics.

HARRY SHIPLEY FRY, Ph. D., Associate Professor of Chemistry.

WILLIAM BUCHANAN WHERRY, A. B., M. D., Associate Professor of Bacteriology.

*CLAUDE M. LOTSPEICH, Ph. D., Assistant Professor of German.

EMILIE WATTS McVEA, A. M., Assistant Professor of English.

GEORGE HENRY ALLEN, Ph. D., Assistant Professor of Latin.

*ISAAC JOSLIN COX, Ph. D., Assistant Professor of History.

GEORGE WALLACE UMPHREY, Ph. D., Assistant Professor of Romance Languages.

*FRANK WASHINGTON BALLOU, A. M., Assistant Professor of the History and Principles of Education.

JOHN JERMAIN PORTER, A. B., Assistant Professor of Metallurgy.

CHARLES NAPOLEON MOORE, Ph. D., Assistant Professor of Mathematics.

SAMUEL JAMES McINTOSH ALLEN, Ph. D., Assistant Professor of Physics.

MAX HENRY GOETTSCH, Ph. D., Assistant Professor of Industrial Chemistry.

HARRY LEWIS WIEMAN, Ph. D., Assistant Professor of Zoology.

EDWARD F. MALONE, A. B., M. D., Assistant Professor of Anatomy.

J. ERNEST CARMAN, B. S., Assistant Professor of Geology.

CHARLES GOOSMANN, M. D., Demonstrator of Pathology.

ELIZABETH MERRILL, Ph. D., Instructor in English.

JOSEPH HENRY KINDLE, A. M., Instructor in Mathematics.

JAMES FRANCIS DILWORTH, A. M., Instructor in English History.

FRED WILBERT UPSON, Ph. D., Instructor in Chemistry.

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* Absent on leave, 1911-12.

** Absent on leave, first semester, 1911-12.

STUDENTS, 1910-11.

(First Semester.)

THE GRADUATE SCHOOL.

THE D. A. R. FELLOW IN AMERICAN HISTORY.

Henshaw, Lesley, Cincinnati.....1928 Bigelow St.
A. B., University of Cincinnati, 1910. (History.)

THE COLONIAL DAMES FELLOW IN OHIO VALLEY HISTORY.

Stecker, H. Dora, Cincinnati .....2728 Hackberry St.
(History.)

THE HANNA FELLOW IN PHYSICS.

Rieman, Edward G., Cincinnati.....2287 Loth St.
A. B., University of Cincinnati, 1908. (Physics.)

FELLOWS BY COURTESY.

Isaacs, Nathan Tovio, Cincinnati .....702 W. Ninth St.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908; Ph. D., University of Cincinnati, 1910. (Economics.)

Smith, Elliott, Cincinnati .....3384 Erie Ave.
A. B., University of Minnesota, 1903; Ph. D., University of Cincinnati, 1910. (Physics.)

UNIVERSITY SCHOLARS.

Adams, Evelyn Crady, Covington, Ky. .....205 Southern Ave.
A. B., Oxford College, 1905. (Latin.)

Burnet, Whittier, Norwood, O. .....1929 Maple Ave.
Ph. B., Ohio State University, 1903; A. M., University of Cincinnati, 1910. (Latin.)

Leist, Amelia A., Norwood, O.....4012 Elsmere Ave.
A. B., University of Cincinnati, 1907. (German.)

Oppitz, Louis K.....Lebanon, O.
A. B., Yale University, 1906; A. M., Yale University, 1909. (Physics.)

Pollak, Jacob, Cincinnati.....1116 Clayton St.
A. B., University of Cincinnati, 1910. (Philosophy.)

Shine, Mary L., Covington, Ky. .....1129 Madison Ave.
A. B., University of Cincinnati, 1902; A. M., University of Cincinnati, 1902. (History.)

GRADUATE STUDENTS.

Adams, Eleanor, Cincinnati .....4212 Hamilton Ave.
A. B., University of Cincinnati, 1902; A. M., University of Cincinnati, 1904. (English.)

Andriessen, Emma, Cincinnati .....116 Parker St.
A. B., University of Cincinnati, 1908. (German.)

Bahr, Antoinette, Cincinnati .....2416 McMicken Ave.
A. B., University of Cincinnati, 1910. (History.)

Bauer, Samuel G., Cincinnati .....828 Hutchins Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Bauer, Stanley M., Cincinnati .....828 Hutchins Ave.
A. B., University of Cincinnati, 1909. (Mathematics.)

Beinhart, Frieda, Cincinnati .....1264 Elm St.
A. B., University of Cincinnati, 1904. (Education.)

Bergman, Erick Frank, Cincinnati .....3540 St. Charles Pl.
A. B., University of Cincinnati, 1908. (German.)

Bettan, Israel, Cincinnati .....724 W. Sixth St.
A. B., University of Cincinnati, 1910. (Philosophy.)

Braam, Maximilian, College Hill, O.....5805 Highland Pl.
A. B., University of Cincinnati, 1906. (German.)

Braun, Annette Frances, Cincinnati .....2702 May St.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Biology.)

Braun, Emma Lucy, Cincinnati .....2702 May St.
A. B., University of Cincinnati, 1910. (Geology.)

Breece, Arthur E., Cincinnati .....170 W. McMillan St.
A. B., Ohio Wesleyan University, 1887. (Mathematics.)

Buerger, Rosa W., Cincinnati .....2343 Wheeler St.
A. B., University of Cincinnati, 1909. (Mathematics.)

Burns, Helen Ormsby, College Hill, O.....Laurel Ave.
A. B., University of Cincinnati, 1910. (English.)

Carman, Gertrude Hancox, Cincinnati .....2719 Euclid Ave.
Ph. B., Simpson College, 1905. (English.)

Clopper, Edward N., Cincinnati .....East Cumminsville
B. S., Bethany College, 1897; A. M., University of Cincinnati, 1910. (Social Science.)

Conant, Roger L., Cincinnati .....4254 Spring Grove Ave.
A. B., Columbia University, 1895. (Social Science.)

Conway, Geneva, Cincinnati .....3608 Eastern Ave.
A. B., University of Cincinnati, 1910. (Mathematics.)

Cope, Ella Mae, Hamilton, O. .....933 Dayton St.
A. B., Mt. Holyoke College, 1907. (History.)

Davis, Ella, Cincinnati .....550 Prospect Pl.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1909. (Economics.)

Dickinson, Adra, Cincinnati .....2551 Erie Ave.
A. B., University of Cincinnati, 1907. (Education.)

Dickoré, Marie Paula, Cincinnati.....3530 Beechmont Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (History.)

Donnelly, Alice M., Cincinnati .....4307 Hamilton Ave.
B. L., University of Cincinnati, 1890. (Greek.)

Dorsey, Howard A., Cincinnati.....2368 Wheeler St.
B. S., Purdue University, 1906. (Mathematics.)

Edwards, Murrell, Cincinnati .....950 Morris St.
A. B., Oberlin College, 1908. (English.)

Eger, Emma L., Cincinnati .....1814 Fairfax Ave.
A. B., University of Cincinnati, 1906. (French.)

English, Frank C., Cincinnati .....3722 Morris Pl.
A. B., Baldwin University, 1897; A. M., Ohio Wesleyan University, 1908. (Economics.)

Ferris, Amy, Cincinnati .....7 Edgecliffe Rd.
A. B., University of Cincinnati, 1908. (English.)

Findley, Margaret Anne, Cincinnati .....318 Ludlow St.
B. L., University of Cincinnati, 1899. (Economics.)

Fouse, William Henry, Covington, Ky.....33 E. Ninth St.
A. B., Otterbein University, 1893. (Education.)

Geismar, Siegfried, Cincinnati .....Sans Souci Bldg.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1910. (German.)

Goodman, Julia M., Hamilton, O.....341 N. Second St.
A. B., Wellesley College, 1907. (French.)

Gordon, Margery, Hamilton, O.....762 Park Ave.
A. B., University of Cincinnati, 1901. (Psychology.)

Gosling, Thomas Warrington, Cincinnati .....Evanswood
A. B., Yale University, 1894; A. M., Yale University, 1904. (English.)

Halben, William von der, Cincinnati .....3145 Bishop St.
A. B., University of Cincinnati, 1910. (German.)

Hartzell, Jacob Lott, Cincinnati .....Lane Seminary
A. B., Trinity College, 1908. (Philosophy.)

Harvey, Gertrude F., Cincinnati....1203 Woodland Ave., Bond Hill
A. B., University of Cincinnati, 1900. (Greek.)

Hecker, Charles, Cincinnati .....3285 Beresford Ave.
Ch. E., University of Cincinnati, 1909. (Chemistry.)

Higgins, Lucius L., Cincinnati .....Lane Seminary.
A. B., Hiram College, 1907. (Philosophy.)

Hoffheimer, Edith Springer, Cincinnati .....10 Madrid Bldg.
A. B., University of Cincinnati, 1910. (English.)

Homburg, Emil, Cincinnati .....104 W. Clifton Ave.
A. B., University of Cincinnati, 1902; A. M., University of Cincinnati, 1909. (Chemistry.)

Jenkins, Alexander Lewis, Cincinnati.....2350 Ohio Ave.
B. M. E., State College of Kentucky, 1904; M. M. E., University of Cincinnati, 1907. (Mathematics.)

Kerr, H. Franklin, Cincinnati .....765 Delta Ave.
A. B., Franklin College, 1896; Th. B., Western Theological Seminary, 1899. (English.)

Kersting, Emma S., Cincinnati .....145 Saunders St.
A. B., University of Cincinnati, 1904. (Mathematics.)

Kiely, Ellen Elizabeth, Cincinnati.....420 Broadway
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1908. (History.)

Kindle, Joseph H., Cincinnati .....Auburn Hotel
A. B., Ohio State University, 1905; A. M., Ohio State Universty, 1907. (Mathematics.)

Kohnky, Emma, Cincinnati.....S. E. Cor. Crown and Essex Pl.
A. B., University of Cincinnati, 1909. (Psychology.)

Kohnky, Frances, Cincinnati....S. E. Cor. Crown and Essex Pl.
A. B., University of Cincinnati, 1908; A. M., University of Cincinnati, 1909. (Psychology.)

Lantis, Vernon, Cincinnati .....2509 Ohio Ave.
A. B., Miami University, 1909. (Biology.)

Lazaron, Morris S., Cincinnati....Highland and McMillan Sts.
A. B., University of Cincinnati, 1909. (Philosophy.)

Levi, Isabelle J., Bellevue, Ky.....106 Van Voast Ave.
A. B., University of Cincinnati, 1909. (Education.)

Levi, Ruth E., Cincinnati .....532 Prospect Pl.
A. B., University of Cincinnati, 1909. (Psychology.)

Lodwick, Edward Wm., Cincinnati .....Bond Hill
A. B., Maysville College, 1909. (Psychology.)

Loeb, Florence, Cincinnati .....827 Rockdale Ave.
A. B., University of Cincinnati, 1909. (German.)

Loebman, Elise Reis, Cincinnati .....524 Hickman St.
A. B., University of Cincinnati, 1909; A. M., University of Cincinnati, 1910. (Economics.)

Lowe, Emma Shaw, Cincinnati .....3443 Evans Pl.
A. B., Radcliffe College, 1902. (English.)

Lurie, Louis A., Cincinnati .....816 W. Ninth St.
A. B., University of Cincinnati, 1908. (Psychology.)

McAvoy, Blanche, Cincinnati .....Foley Rd.
A. B., University of Cincinnati, 1909. (Biology.)

McConaha, Grace C., Cincinnati .....1056 Wesley Ave.
A. B., University of Cincinnati, 1903. (Philosophy.)

McNelly, Nanabel, Cincinnati .....241 W. McMillan St.
A. B., University of Cincinnati, 1907. (Mathematics.)

McNutt, Florence.....Mt. Healthy, O.
A. B., University of Cincinnati, 1907. (English.)

Mack, Edward, Cincinnati .....Lane Seminary
A. B., Davidson College, 1886; A. M., Davidson College, 1887. (Philosophy.)

Mackzum, Henrietta M., Cincinnati .....Carthage
A. B., University of Cincinnati, 1909; A. M., University of Cincinnati, 1910. (Education.)

Mauchly, Sebastian J. .....5 Oak Ave., Hartwell, O.
A. B., University of Cincinnati, 1910. (Physics.)

Metz, Elsie L., Cincinnati .....2648 Melrose Ave.
A. B., University of Cincinnati, 1902. (German.)

Miner, Frank N., Cincinnati .....224 W. Liberty St.
A. B., Albion College, 1898. (Philosophy.)

Mitchell, William Carleton, Cincinnati .....1317 Chase Ave.
A. B., Lebanon College, 1889; B. D. Drew Seminary, 1893. (Economics.)

Murray, Alma Darst, Cincinnati .....502 Clinton St.
A. B., University of Cincinnati, 1909. (Comparative Literature.)

Nippert, Eleanore C., Cincinnati .....24 Krug Bldg.
A. B., University of Cincinnati, 1903. (German.)

Ottermann, Charles, Cincinnati .....2608 Jefferson Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Parker, Mrs. Harriet Lewis, Cincinnati .....1432 Pullan Ave.
B. L., Bucknell University, 1894; A. M., University of Cincinnati, 1910. (Philosophy.)

Parker, William Hammond, Cincinnati.....1432 Pullan Ave.
Ph. B., Bucknell University, 1897. (Economics.)

Peaslee, Leon Denning, Cincinnati.....Stratford Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1908. (Biology.)

Perin, Carrie M.....Madisonville, O.
A. B., University of Cincinnati, 1910. (French.)

Phillips, Ethel, Cincinnati .....The Navarre
B. L., University of Cincinnati, 1898. (French.)

Prather, Florence Dombey, Cincinnati .....619 Crown St.
A. B., Vassar College, 1908. (English.)

Rabenstein, Matilda A., Cincinnati .....2816 Highland Ave.
A. B., University of Cincinnati, 1896; A. M., University of Cincinnati, 1899. (German.)

Raum, Clara, Cincinnati .....261 Pike St.
B. L., University of Cincinnati, 1899. (Latin.)

Rhea, Frank Hiett, Newport, Ky. .....415 E. Fifth St.
A. B., University of Illinois, 1898; LL. B., University of Illinois, 1903. (History.)

Renner, Mrs. O. J., Cincinnati .....University Court.
A. B., University of Cincinnati, 1910. (Greek.)

Robertson, Arthur Blaine, Cincinnati .....2633 Bellevue Ave.
A. B., University of Cincinnati, 1910. (History.)

Rosenberg, Adolph, Cincinnati .....612 Richmond St.
Gymnasium, Frankfurt, and University of Giessen. (Philosophy.)

Rowell, Mary Emma, Cincinnati .....849 Hutchins Ave.
A. B., University of Cincinnati, 1907; A. M., University of Cincinnati, 1910. (Mathematics.)

Ruecker, August, Cincinnati .....937 McPherson Ave.
B. D., Hartford Theological Seminary, 1907; A. M., University of Cincinnati, 1910. (Philosophy.)

Sanders, Ethel, Cincinnati .....2918 Montana Ave.
A. B., University of Cincinnati, 1907. (Mathematics.)

Schoff, Amy L., Cincinnati .....847 Oak St.
B. L., University of Cincinnati, 1890. (English.)

Schrader, Else, Cincinnati .....2348 Ohio Ave.
A. B., University of Cincinnati, 1903; A. M., University of Cincinnati, 1907. (English.)

Schroerlucke, Laura Louise, Cincinnati.....The Du Casse
A. B., University of Cincinnati, 1909. (Mathematics.)

Seat, Elizabeth Ferguson, Cincinnati .....228 W. Seventh St.
A. B., Mary Sharp College, 1882. (English.)

Selbert, Louis, Cincinnati .....3514 Bevis Ave.
A. B., University of Cincinnati, 1909; A. M., University of Cincinnati, 1910. (French.)

Shorten, Lauretta, Cincinnati .....2145 Grand St.
A. B., University of Cincinnati, 1908. (English.)

Siehl, Benjamin H., Cincinnati .....2220 Ohio Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Siehl, Charles F., Cincinnati .....Lyon St., near Clifton Ave.
A. B., University of Cincinnati, 1906; A. M., University of Cincinnati, 1908. (Mathematics.)

Smith, Elizabeth Anita, Covington, Ky.....1500 Garrard St.
A. B., University of Cincinnati, 1910. (Biology.)

Sommerfield, Mrs. Selma W., Cincinnati.....4064 Rose Hill
A. B., University of Cincinnati, 1900. (Economics.)

Sutor, Julia Louise, Lockland, O.....N. Ruffner St.
A. B., University of Cincinnati, 1901. (English.)

Tackenberg, Charles W., Cincinnati.....124 E. University Ave.
A. B., University of Cincinnati, 1909. (German.)

Tawney, Mrs. Guy Allan, Cincinnati.....2236 Burnet Ave.
A. B., Vassar College, 1896. (Philosophy.)

Tedesche, Irene, Cincinnati .....2415 Clifton Ave.
A. B., University of Cincinnati, 1910. (Education.)

Thomas, Alma H., Cincinnati.....647 June St.
A. B., University of Cincinnati, 1900. (Education.)

Thomas, J. Elbert, Cincinnati .....250 Hosea Ave.
A. B., Union College, 1893; St. B., Boston University, 1898. (Philosophy.)

Thorndyke, Elizabeth, Cincinnati .....3549 Bevis Ave.
A. B., University of Cincinnati, 1909. (History.)

Thorp, Jr., Abner, Cincinnati .....512 Prospect Pl.
A. B., Amherst College, 1903. (Greek.)

Trimble, James Rolf, Cincinnati .....121 Main St.
A. B., Harvard University, 1906. (Mathematics.)

Van Hart, Clara M., Cincinnati .....341 Shiloh St.
A. B., University of Cincinnati, 1909. (Education.)

Weil, Valerie M., Cincinnati .....2532 Highland Ave.
A. B., University ofCincinnati,1902. (German.)

Whallon, Albert Kitchel, Wyoming, O.....Wentworth Ave.
A. B., Hanover College, 1905; B. A., Oxford University, England, 1910. (History.)

Wilson, Glorvina.....Ft. Thomas, Ky.
B. L., Ohio Wesleyan University, 1906. (English.)

Wolf, Jane Esther, Cincinnati .....3241 Jefferson Ave.
A. B., University of Cincinnati, 1906. (French.)

Yowell, Everett I., Cincinnati .....Corbett and Griest Sts.
C. E., University of Cincinnati, 1891; M. S., University of Cincinnati, 1893. (Astronomy.)

Zanoni, Elizabeth Corinne, Cincinnati.....357 Howell Ave.
A. B., University of Cincinnati, 1905. (Latin.)

REGISTRATION IN THE GRADUATE SCHOOL SINCE ITS FOUNDATION.

Year.	Number of Students.
1905-06	51
1906-07	82
1907-08	86
1908-09	92
1909-10	115
1910-11	121

INFORMATION FOR STUDENTS.

ADMISSION.

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School.

Students entering the Graduate School should apply to the Dean of the Graduate School, during the first week of either the first or second semester, between the hours of 9 and 12 A. M. If not a graduate of this university the applicant should be prepared to give proof of his academic degree or degrees, and should afford evidence of the character of the courses he has taken in the college from which he has been graduated. On the presentation of satisfactory credentials a card of admission to the Graduate School will be issued to the applicant. Students will not be admitted to the Graduate School after the third week of the semester.

FEES IN THE GRADUATE SCHOOL.

All fees must be paid in advance to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Dean is authorized to exclude students from attendance upon their classes. No University fees are refunded.

Library Fee.—All graduate students are charged a library fee of five dollars per year.

Tuition.—Tuition is free to residents of Cincinnati. Graduate students not residents of the city are charged tuition at the rate of three dollars per credit hour. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to nine dollars a semester or eighteen dollars per year. All tuition fees are payable in advance.

Laboratory Fees.

Geology, five dollars per semester, in advance.

Psychology, five dollars per semester, in advance.

Biology, ten dollars per semester, in advance.

Physics, ten dollars per semester, in advance. (Five dollars per semester, in advance, for a laboratory course of one period a week.)

Chemistry, fifteen dollars per semester, in advance. (Metallurgy, seven dollars and fifty cents per semester.)

A deposit of fifteen dollars at the opening of the semester is required of all students taking Chemistry, to insure the University against loss by breakage in the Chemical Laboratory. This deposit will be returned at the end of the year after deductions have been made for breakage.

A student who elects a laboratory course shall not be permitted to enter such a course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Diploma Fees.—A diploma fee of ten dollars is required of those who receive the Master's degree and twenty dollars of those who receive the Doctor's degree. This fee must be paid at least two weeks before the day appointed for conferring the degree. If for any reason the degree is not conferred the fee will be returned.

Late Registration Fee. Students who apply for registration or submit schedules of study on days other than those designated, will be required to pay a fee of one dollar.

INSTRUCTION.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS.

In order to receive the Master's degree the candidate must have completed satisfactorily courses representing twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of

the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar, not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

For the Doctor's degree, three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German, and shall be required to complete forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of inde-

pendent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING.

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE.

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS.

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarships carry a stipend of from one hundred to five hundred dollars. (See list given below.) The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

FOUNDATIONS.

The D. A. R. Fellowship in American History. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

The Fellowship in Ohio Valley History was established in 1906 by the Society of Colonial Dames, and yields an income of $300 a year.

The Hanna Fellowship in Physics. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

The Alliance Française Scholarship, of $300, was established in 1904 by the Alliance Française of the City of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

The Armstrong-Hunter Memorial Fund, valued at $900, was established in memory of Miss Sarah J. Armstrong and Miss Clara Hunter, by eighty of their former pupils. This fund will be used, when it reaches the sum of $1,000, to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

COURSES OF INSTRUCTION.

ANATOMY.

Professor Knower, Assistant Professor Malone, Dr. Wieman.
Assistant: Mr. Peaslee.

6. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the Professor of Anatomy.

ASTRONOMY.

Professor Porter.

The Cincinnati Observatory, constituting the astronomical department of the University, is situated on Mount Lookout. The grounds comprise about thirteen acres. On the highest point stands the main building, surmounted by a thirty-foot dome. This dome houses the large equatorial, built by the Alvan Clark and Sons' Corporation. The diameter of the objective is

sixteen inches, and the focal length slightly over twenty feet. The instrument is equipped with driving clock, micrometer, electric lighting, and other devices requisite for convenient manipulation. The magnifying powers range from 80 to 800.

In the western wing is placed the meridian circle by Fauth and Co. This instrument has an aperture of five inches and a focal length of seventy inches. The circle is divided to five minutes of arc, and read by four microscopes to single seconds. The eastern wing is used as a library and computing room.

A clock vault in the basement contains the new Riefler standard and secondary clocks, the latter synchronized with the former, and this in its turn controlling two dials placed in the transit room and dome.

A smaller observatory, named the O. M. Mitchel Building, in honor of the original founder of the institution, has been erected for the reception of the eleven-inch equatorial. The Observatory possesses also a four-inch equatorial by Clark, a sidereal chronometer by Bond, a chronograph by Fauth, and a mean-time clock by Ritchie. The library contains about 3,500 volumes, including most of the star catalogues and many valuable works of reference.

The scientific activity of the Observatory has been uninterrupted since the removal in 1873 to the present site. During this period sixteen numbers of the regular publications have been issued, besides many memoirs which have appeared in the astronomical journals. Special prominence is given to stellar astronomy, many important discoveries having been made in this field. The Observatory is also co-öperating at the present time with the International Geodetic Association in the determination of the variation of latitude.

FOR UNDERGRADUATES AND GRADUATES.

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester;* hours to be arranged.
Professor Porter.

5b. Computation of a parabolic orbit from three observations, and of an elliptic orbit with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester;* hours to be arranged.
Professor Porter.

Courses 4a and 5b are given at the Observatory.

*BIOLOGY.

Professor Guyer, **Associate Professor Benedict, Dr. Wieman.

To pursue advanced courses in biology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES.

To enter upon work for the degree of Master of Arts in zoology students must have completed Courses 1a, 2a, 3b, 4b, 10a, 15a, 17b, 18b, or their equivalents. (See Biology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology. The requirements for a higher degree, when biology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 24).

LABORATORIES.

The Biological Department occupies the east half of the basement and the second and third floors of Cunningham Hall. The fixtures have been carefully designed to meet all of the requirements of modern biological work, and the laboratories are well provided with optical apparatus and the various instruments of biological technique. Besides these, a liberal supply of more special appliances is at the service of the investigator. Special laboratories are provided for students taking advanced courses and courses of research.

FOR UNDERGRADUATES AND GRADUATES.

19. Embryology and Histology of Vertebrates.—Twelve weeks of the first semester are devoted to embryology, the remainder of the first and the entire work of the second semester, to histology. The work in embryology consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. The histological work con-

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*For a statement of the undergraduate courses prerequisite to advanced work in Biology, see the announcement of the McMicken College of Liberal Arts.

**Absent on leave, first semester, 1911-12.

sists of lectures and recitations upon the microscopic structure of tissues and organs. This course must be accompanied by Course 20. M., W., 11:30-12:30. Assistant Professor Wieman.

Course 19 is open to students who have passed in Courses 1, 2, 3, 4.

20. Embryology and Histology of Vertebrates, Laboratory. —Laboratory work to accompany Course 19. In embryology the work is based largely on the chick and pig. In histology chiefly human and other mammalian tissues are studied. Students who have not had Course 10a are advised to take it in connection with this course. M., W., 8:30-11:30.

Assistant Professor Wieman and Mr. Peaslee.

Course 20 is open to students who have passed in Courses 1, 2, 3, 4.

23. Field Work.—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three hour course. Hours to be arranged. Associate Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany or zoology.

24a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester*, T., 10:30-11:30. Associate Professor Benedict or ———.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

25a. Plant Histology, Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester*, T., Th., 8:30-11:30.

Associate Professor Benedict or ———.

26b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester*, T., 10:30-11:30.

Associate Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

27b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own prepa-

rations. This course must be taken in connection with Course 26b. *Second semester,* T., Th., 8:30-11:30.

Associate Professor Benedict.

PRIMARILY FOR GRADUATES.

30. Current Problems in Biology.—Assigned readings and discussions to accompany courses of research. Heredity is the topic for 1911-12. A reading knowledge of French or German is required. M., Th., 4:00-5:00.

Professor Guyer.

31. Research.—Hours to be arranged.

Professor Guyer and Associate Professor Benedict.

32a. Anatomy and Physiology of the Cell; Non-Developmental Phenomena.—Lectures on the structure and function of cells other than germ cells. *First semester,* W., F., 4:00-5:00.

Professor Guyer.

33b. Anatomy and Physiology of the Cell; the Germ Cell.—Lectures dealing with the cell from the viewpoint of development and inheritance. *Second semester,* W., F., 4:00-5:00.

Professor Guyer.

34. Cytology, Laboratory.—A laboratory course intended to serve as an introduction to cytological technique and to the general field of cellular biology. Each student is assigned a special problem. T., Th., 1:00-4:00. Professor Guyer.

CHEMISTRY.

Professor Jones, Associate Professor Fry, Assistant Professor Porter, Assistant Professor Goettsch, Assistant Professor Reemelin, Dr. Upson, Dr.————

PREFATORY.

There never was a period when chemistry touched the various sciences and the demands of practical life at so many points as it does at the present time. This manifold relationship has made it necessary to arrange courses in chemistry which may be sufficiently varied to suit the requirements of many classes of students. A choice of consecutive courses may be made by students who are taking chemistry as a disciplinary study, and with a desire to complete a general education. Many courses have been offered which have a definite and intimate relationship to the industrial activities of modern life. Furthermore, a number of specialized courses of an advanced character have been announced to give the proper training to those students who may wish to carry on graduate work in the nature of

research leading to a Master's or a Doctor's degree. For all advanced work in chemistry students must acquire a reading knowledge of German and French very early in the course, since an acquaintance with these languages is assumed in the later work.

EQUIPMENT.

The Department of Chemistry occupies Hanna Hall. The main laboratories are devoted to general inorganic chemistry, elementary organic chemistry, qualitative and quantitative analysis. There are special laboratories arranged for courses in organic, physical, and technical chemistry. A thoroughly equipped laboratory has been provided for advanced metallurgical work. Several private laboratories are provided for instructors, and for graduate students who are engaged in research. The laboratories are open from 8:30 a. m., to 5 p. m., on every working day except Saturday, when they close at 1:00 o'clock. Concerning the laboratory fees and special deposit, see pages 23-24.

THE LIBRARY.

A departmental library, comprising about 2,000 volumes, has quarters on the first floor of Hanna Hall. It contains complete series of the important periodicals in English, German, French, and Italian, and a large number of the current journals of chemistry are kept on file. The standard hand-books and works of reference, and many special and technical works of recent publication are available.

SPECIAL REQUIREMENTS FOR HIGHER DEGREES.

The Degree of Doctor of Philosophy.

Candidates for the degree of Doctor of Philosophy must have a broad preparation in the fundamental branches of chemistry. The character of this training can be defined best by reference to the list of courses under "A" below. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12b, 13b. In addition to these

requirements, students who specialize in a certain branch of chemistry must complete the following courses in accordance with their choice, before receiving the degree:

(a) **Inorganic Chemistry:** 10a, 11a, 21 (one semester); 17 (one semester); and ten credit hours elected from Courses 14b, 15a, 16a, 20b, 24, 28b, 35b.

(b) **Organic Chemistry:** 20b, 21, 35b, 17 (one semester); and ten credit hours elected from Courses 10a, 11a, 14b, 18b, 24, 28b, 34.

(c) **Physical Chemistry:** 10a, 20b, 34, 17 (one semester); and ten credit hours elected from Courses 14b, 19b, 11a, 21, 24, 28b, 35b.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12b and 13b (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree.

The Department of Chemistry requires that at least sixteen of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail upon a subject suggested by the instructor under whose direction the student has been placed.

FOR UNDERGRADUATES AND GRADUATES.

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. In this course the less familiar elements and their compounds, and the more recent theories of inorganic chemistry are discussed. T., Th., 8:30-9:30.

Assistant Professor Goettsch.

Prerequisite: Courses 5a, 6, and 7b.

Omitted in 1911-12.

11a. Inorganic Preparations.—Three laboratory exercises a week during the first semester. Preparation of specimens of inorganic compounds. M., W., F., 1:00-4:00.

Assistant Professor Goettsch.

Prerequisite: Course 7b.

12b. Physical Chemistry.—Lectures and recitations. A general introductory course of three exercises a week throughout the second semester. M., W., F., 11:30-12:30.
Professor Jones.
Prerequisite: Courses 5a, 6, and 7b; Physics, 1 year; Math. 5.

13b. Physical Chemistry, Laboratory.—Two exercises a week throughout the second semester, illustrating the general static and dynamic methods of physical and electro-chemistry. This course must be accompanied by Course 12b. Th., F., 1:00-4:00. Professor Jones.
Prerequisite: Same as Course 12.

20b. Advanced Organic Chemistry.—Lectures and conferences, embracing a systematic study of the principles and practice of organic chemistry, and treating of the modes of formation, properties, reactions, and constitution of typical members of the most important classes of organic compounds. *Second semester,* M., T., W., Th., F., 10:30-11:30.
Professor Jones.
Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. This course requires considerable reading in the journals of chemistry and in various hand-books and works of reference. M., W., F., 1:00-4:00. Professor Jones.
Prerequisite: As in Course 20b.

24. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter, and considers the development of the fundamental laws of the science of chemistry. Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. M., Th., 4:00-5:00. Associate Professor Fry.
Prerequisite: 5a, 6, 8a, and 9a, or 20b and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two periods a week during the second semester; hours to be arranged. Professor Jones.
Prerequisite: 5a, 6, 8a, 9a; Physics, 1 year.

PRIMARILY FOR GRADUATES.

30. Research.—This course requires at least eight periods of laboratory work per week under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d). Professor Jones, Assistant Professor Fry,
Assistant Professor Porter, Assistant Professor Goettsch.

34. Mathematical Chemistry.—A study of the application of exact and approximate mathematics in physical science. Two periods a week; hours to be arranged.

Prerequisite: Chemistry 12, 13; Math. 8a, 9b.

35b. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration are chosen from the following: optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpines; tautomerism; the polypeptides, proteins, etc. *Second semester.* Two hours a week, to be arranged. Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS.

(The Sinton Professorship.)

Professor Hicks.

FOR UNDERGRADUATES AND GRADUATES.

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist principally of a comparison of the views of representative economists. T., 4:00-6:00. Professor Hicks.

Course 11 is open to students who have completed at least two years of university work.

12. Industrial Evolution.—An analysis of the modern economic system and a study of its development from earlier forms of industry. W., 4:00-6:00. Professor Hicks.

Course 12 must be preceded or accompanied by Course 11.

13. Applied Economics.—A study of the leading economic problems such as socialism, land nationalization, labor, trusts, money, transportation and the tariff. Th., 4:00-6:00. Professor Hicks.

Course 13 must be preceded or accompanied by course 12.

PRIMARILY FOR GRADUATES.

21. History and Method.—For the first semester, the subject considered will be the history of economic thought. The second semester will be given to a consideration of sources and methods of investigation. T., Th., 3:00-4:00.
Professor Hicks.

22. Seminary.—Opportunity is here given for the detailed study of specific problems in economics. Credit according to work done. Hours to be arranged. Professor Hicks.

EDUCATION.

Professor Burris, Professor Hall.

Education 3. Principles and Problems of Secondary Education.—The first part of the course will consider the principles of secondary education, with special reference to those derived from the psychology of adolescence. The second part of the course will be devoted to a critical consideration of the problems of high school organization, with special reference to courses of study, relative values of studies, and methods of instruction. S., 9:30-11:30. Professor Burris.

Open to graduates and teachers who contemplate appointment to high school positions. For the conditions under which graduate students may enter the course (see the catalogue, p. 151, Program II).

Education 5. Philosophy of Education.—Lectures, required readings, and discussions. The first part of the course will present an integrated view of the facts of the various sciences having educational significance, for the purpose of arriving at a philosophical definition of education as a whole. The second part of the course will deal with the organization of elementary education as determined by its philosophical meaning thus derived, and as modified by practical considerations. In appropriate connections there will be special consideration of the process of education as world building. The historical and logical origin, meaning, and classification of studies will be briefly considered. Special attention will be given to the question, What happens when we try to know? and to the place of symbolism and systems of imitational and inventional expression in education. Credit will be given only to those who take the course throughout the year. S., 8:30-9:30. Professor Burris.

Open to graduates and teachers of experience who have had some philosophical training.

Omitted in 1911-12.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. W., 4:00-6:00. Professor Burris.

Education 9. Statistical Study of Educational Questions. Open to graduates and teachers of experience. M., 4:00-6:00.
Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. W., 4:00-6:00.
Professor Hall.

For graduates of the College for Teachers and others properly qualified who wish to prepare for supervisory positions.

Education 17. Educational Classics.—An advanced course in the history of education. From year to year it will consist of a critical study of the more important writings of "Great Educators" of special periods. M., 4:00-6:00.
Professor Burris.

Open to graduates and teachers of experience who have a satisfactory knowledge of the history of education.
Omitted in 1911-12.

Education 1, 2, and 6. These courses, (for a description of which see Announcement of the College for Teachers) when pursued by graduate students, may be counted for credit toward a graduate degree, provided such students do satisfactory pieces of independent work and embody the results of the same in acceptable written theses. The number of credits allowed, respectively, for these courses, will be six, six, and two.

ENGLISH.

COMPARATIVE LITERATURE.

(The Nathaniel Ropes Foundation for the Comparative Study of Literature.)

Professor Chandler, Associate Professor Miller, Assistant Professor McVea, Dr. Merrill.

FOR UNDERGRADUATES AND GRADUATES.

7a. Old English Prose.—An elementary reading course in Old English, the texts being taken from Bright's *Anglo-Saxon Reader. First semester.* M., W., F., 10:30-11:30.
Dr. Merrill.

Course 7a is prerequisite to Courses 8b and 9, and is required of all students who choose English as a major subject. Further conditions for a major in English may be satisfied by Courses 8b, 9, or 10.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester*, M., W., F., 10:30-11:30.
Dr. Merrill.

9. English Literature from the Conquest to the Death of Chaucer.—In the first semester selected works are read (Emerson, *Middle English Reader*) which illustrate the development

of English literature and the English language before Chaucer. The second semester will be devoted to the life and works of Chaucer. Th., 3:00-5:00. Dr. Merrill.

10. The History of the English Language.—The general development of the English language, with special reference to the modern period. T., Th., 4:00-5:00. Dr. Merrill.

Omitted in 1911-12.

Students who choose English as a major subject are required to take Courses 7a, and either 8b or 9 or 10.

12. Literary Composition.—This course considers the various prose literary forms from the point of view of original composition. Only those students are admitted to the course who satisfy the instructor of their ability to write well. Hours to be arranged. Assistant Professor McVea.

14. The English Drama before Shakspere.—This course considers the origins of the English drama and its earlier manifestations in miracle plays, moralities, and interludes, as well as the regular drama to the death of Marlowe. M., W., F., 11:30-12:30. Associate Professor Miller.

Omitted in 1911-12.

15. The English Drama from the Death of Marlowe to 1642. —A study of Shakspere's contemporaries and immediate successors in the development of the drama. M., W., 11:30-12-30. Associate Professor Miller.

17. Literary Criticism.—The development of English literary criticism from Ascham to Pater, with a brief discussion of American literary criticism and of the characteristics of criticism as a literary form. T., Th., 9:30-10:30. Associate Professor Miller.

19a. The English and Scottish Popular Ballads.—A study of the characteristics of folk-poetry and of the origin and development of the popular ballad. *First semester,* M., W., 8:30-9:30. Associate Professor Miller.

21b. English Non-dramatic Poetry of the Sixteenth and Seventeenth Centuries.—A study of the development of English poetry, exclusive of the drama, from the beginning of the Elizabethan Age to the Queen Anne Period, including some special study of verse forms and a brief preliminary survey of the poetry from Chaucer to Tottel's *Miscellany. Second semester,* M., W., 8:30-9:30. Associate Professor Miller.

22. Foreign Backgrounds of English Literature.—An introduction to the literature of modern Europe, presenting a general survey of some of the more important works and tendencies since the Renaissance, with particular stress upon such as have proved influential in England. T., Th., 2:00-3:00. Professor Chandler.

23. The Literary Movement of the Eighteenth Century.—A detailed study of the characteristics of romanticism and of their manifestation in the literature of England, France, and Germany prior to the culmination of the movement in the early nineteenth century. T., 4:00-6:00. Professor Chandler.

Omitted in 1911-12.

24. Studies in the Drama.—A course tracing the growth of the drama in Europe, the unfolding of different genres, the trend of literary influences, the personal qualities of great dramatists, and the national dramatic contributions of different countries. Some attention will be paid to the technic of the drama and its dependence upon the conditions of actual production. W., 4:00-6:00. Professor Chandler.

FOR GRADUATES ONLY.

20. Seminary.—Studies in Literary Theory.—An examination of the principal theories of literature considered historically and philosophically. The later portion of the course will be devoted to the investigation of special problems in literary criticism. F., 4:00-6:00. Professor Chandler.

GEOLOGY AND GEOGRAPHY.

Professor Fenneman, Assistant Professor Carman.
Assistant: Mr. von Schlicten.

The Department of Geology and Geography occupies the fourth floor of McMicken Hall, except a part of the space used for a museum of zoology and geology. A general laboratory is used for work with maps and fossils and for work with hand specimens of rocks and minerals, with only such apparatus and reagents as may be carried in the field. A laboratory for determinative mineralogy and another for microscopic petrography are equipped with appliances and instruments of the most modern type.

A seminar room contains the departmental library and current geologic and geographic periodicals, together with all reference maps, topographic, geologic, and geographic, belonging to the department. Graduate students may be allowed private desks in the petrographic laboratory, which communicates with the seminar room.

FOR UNDERGRADUATES AND GRADUATES.

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit for work done. Course 2 is prerequisite.

Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. T., Th., S., 8:30-9:30.

Professor Fenneman and Assistant.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized.

Assistant Professor Carman.

9. Historical Geology.—The rock formations of each geologic period, chiefly in North America, studied in historical order; their description, geographic distribution, and explanation; physical conditions and events attending the formation of each as known from its character and fossils; life development and faunal migrations. M., W., F., 11:30-12:30.

Assistant Professor Carman.

Course 2 is prerequisite.

10. Paleontology.—A continuation of Course 8. Assignments of work are made to each student individually and are determined by the material available and the wishes of the student. Credit according to work done.

Assistant Professor Carman.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification.

Professor Fenneman and Assistant.

Course 7 is prerequisite.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to the value of the work.

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*Course 2 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major unless Course 2 or its equivalent has been taken.

GERMAN.

Professor Poll, *Assistant Professor Lotspeich.

FOR UNDERGRADUATES AND GRADUATES.

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1910-11; *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00. Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30. Professor Poll.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30. Professor Poll.

Omitted in 1911-12.

PRIMARILY FOR GRADUATES.

12. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. *First semester,* T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. S., 11:30-12:30. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

7. Middle High German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. T., Th., 9:30-10:30. Professor Poll.

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*Absent on leave, 1911-12.

8. Old High German.—Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as text-books. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1911-12.

13. Gothic.—Braune's *Gotische Grammatik;* reading of selections from Ulfilas; lectures on Germanic philology. M., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1911-12.

26. Old Norse.—Kahle's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00. Assistant Professor Lotspeich.

Omitted in 1911-12.

35. History of German Literature to the Nineteenth Century.—This will be substantially the same as Course 5, slightly rearranged, however, to meet the needs of teachers. T., 4:00-6:00. Professor Poll.

Omitted in 1911-12.

9. German Seminary.—Wilm's *Van den vos Reinaerde. Second semester.* T., 4:00-6:00. Professor Poll.

15. German Proseminary.—Advanced readings in Gothic, Old High German and Old Saxon. Three hours' credit per semester. Professor Poll.

GREEK.

Professor Harry.

Many casts of works of antique art have been installed in the Greek room and in the corridors of the University. Students in both undergraduate and graduate courses also have opportunities to study the casts in the Cincinnati Art Museum.

FOR UNDERGRADUATES AND GRADUATES.

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Sculpture, vase paintings, coins, gems, engravings, wall paintings, (1910-11); pre-hellenic archaeology, Greek architecture, and sculpture, (1911-12). T., 10:30-11:30. Professor Harry.

This class is limited to thirty students.

PRIMARILY FOR GRADUATES.

5. Rapid Reading in the Historians.—W., 3:00-4:00.
Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.
Professor Harry.

7. Greek Seminary.—The Historians (1910-11); Plato (1911-12). M., 3:00-5:00.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY.

Professor Whitcomb, *Assistant Professor Cox, Mr. Dilworth.

FOR UNDERGRADUATES AND GRADUATES.

25. European History Since 1814.—An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization. T., Th., 10:30-11:30.
Professor Whitcomb.

Omitted in 1911-12.

46. History of Germany.—Beginning with the early Germans this course will follow the history of the German peoples down to the present time. The relations of the Germans to the Roman Empire; conquests of Charles the Great; the Medieval Empire; the Reformation; rise of the Hohenzollern dynasty; period of Frederick the Great; Napoleon; Wars of Liberation; organization of the German Empire. T., Th., 10:30-11:30.
Professor Whitcomb.

Open to seniors and juniors.

33. The Civil War and Reconstruction.—The course includes a survey of the causes of the Civil War and a review of the main features of the great sectional contest and of the Reconstruction period. Lectures, with collateral reading and special reports. T., Th., 4:00-5:00.
Assistant Professor Cox or ———.

Open to advanced students and teachers.

38. American Territorial Diplomacy.—The course reviews the claims of various European nations to the American continent, and is followed by a detailed study of the diplomatic and frontier questions involved in the territorial expansion of the United States. M., W., F., 11:30-12:30.
Assistant Professor Cox or ———.

Open to those who have had Course 15 or its equivalent.

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*Absent on leave, 1911-12.

21. American Constitutional History.—The course treats of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. M., W., F., 11:30-12:30. Assistant Professor Cox or ———.

Omitted in 1911-12.

40. English Constitutional History.—The course traces the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 8:30-9:30.
Mr. Dilworth.

44. English History Since 1856.—This course deals with the political, economic, and religious history of England since the close of the Crimean War and with the present day problems. T., Th., 11:30-12:30. Mr. Dilworth.

Open to seniors and juniors.

45a. European Law in its Historical Development.—This course includes a survey of the great systems of law which have prevailed in Europe since the disintegration of the Roman Empire. The Germanic Codes, the Canon Law, the Law Merchant, and the attempts at modern codification are treated. Special attention is given to the law of the Middle Ages. While this course may appeal to students who intend to engage in the study and practice of law, it is believed that it will be of interest to the more general student of European civilization. *First semester,* T., 1:00-3:00. Mr. Dilworth.

Course 45b is open to students who have passed in Course 1 or who have obtained the consent of the instructor.

PRIMARILY FOR GRADUATES.

34. Seminary in European History.—Bibliography and Method. Study of the works of Langlois, Bernheim, and Aloys Meister; criticism of historical works, Taine, Bury, and others; the Lamprecht controversy, etc. A reading knowledge of French and German required. Admission only on application. Two hours a week; period to be arranged.
Professor Whitcomb.

39. Seminary in American History.—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. Two hours per week; S., 10:30-12:30. Assistant Professor Cox or ———.

41. Seminary in Medieval History.—The work of the class will center about the reading of a chronicle. Reports, based on source material. Ability to read either French or German required. Period to be arranged. Mr. Dilworth.

LATIN.

Professor Burnam, Assistant Professor Allen.

The work, while not neglecting the philological side of the subject, will emphasize more and more, as the student progresses, its historical and humanitarian aspect. The University Library has the beginning of a fair special collection, chiefly devoted to the authors most read in the course. After the second year the seminary method will be used as far as possible. The students in Palaeography will find some MSS. and a considerable collection of facsimiles and treatises at their disposal.

PRIMARILY FOR GRADUATES.

Hours in all cases to be arranged.

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. I to the close of the 15th century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a. Caesar. Omitted in 1911-12.

10b. Cicero. Omitted in 1911-12.

10c. Virgil. Lectures, reports, and papers, on special topics. This course is intended, primarily, to afford the special training required by those who are preparing to teach Virgil. Three hours.

The seminary considers Caesar, Cicero and Virgil, in successive years in the order mentioned. The author to be studied in 1911-12 (Course 10c) is Virgil. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

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*MATHEMATICS.

Professor Hancock, Assistant Professor Moore, Mr. Kindle.

FOR UNDERGRADUATES AND GRADUATES.

6a. Advanced Analytical Geometry of Two Dimensions.—C. Smith, *Conic Sections*. Lectures. M., W., F., 10:30-11:30, *first semester*. Mr. Kindle.

Course 6a is open to graduate students and to those who have passed in Course 5.

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*See courses in Applied Mathematics, College of Engineering; credit is also given for some of the courses in the College for Teachers.

7b. Analytical Geometry of Three Dimensions.—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry*. Lectures. M., W., F., 10:30-11:30, *second semester*. Mr. Kindle.

Course 7b is open to graduate students and to those who have passed in Course 5.

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations*. Lectures. M., W., F., 10:30-11:30. Assistant Professor Moore.

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus*. Lectures. M., W., F., 9:30-10:30, *first semester*.
Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations*. Lectures. M., W., F., 9:30-10:30, *second semester*.
Professor Hancock.

17. Elementary Course in the Theory of Functions.—S., 10:30-12:30. Assistant Professor Moore.

PRIMARILY FOR GRADUATES.

33. Theory of Numbers.—Algebraic Numbers.—Part II. Kronecker's Theory. T., 4:00-6:00; S., 10:30-12:30.
Professor Hancock.

32. Theory of Numbers.—Algebraic Numbers.—Part I. Dedekind's theory. T., 4:00-6:00; S., 10:30-12:30.
Omitted in 1911-12. Professor Hancock.

31. Theory of Numbers.—Natural Numbers.—Lectures founded on the Berlin lectures of Kronecker, Frobenius and Dirichlet's Zahlentheorie. T., 4:00-6:00; S., 10:30-12:30.
Omitted in 1911-12. Professor Hancock.

28. Theory of Functions.—Lectures on the theory of functions of real variables. M., W., F., 9:30-10:30.
Omitted in 1911-12. Assistant Professor Moore.

29. Theory of Functions.—Lectures on the theory of functions of a complex variable. Hours to be arranged.
Omitted in 1911-12. Assistant Professor Moore.

24. Elliptic Integrals and Elliptic Functions.—The theories of Legendre, Abel, Jacobi, and of Riemann, Hermite, Weierstrass. Lectures founded on the Berlin lectures of Fuchs, Schwarz, and Weierstrass. T., 4:00-6:00; S., 10:30-12:30.
Omitted in 1911-12. Professor Hancock.

25. Application of Elliptic Functions.—The general theory of Course 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and

surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.—Lectures. W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1911-12.

18a. Theory of Minimal Surfaces.—The developments of Lie, Darboux, Schwarz, and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester.* Professor Hancock.

19b. The Extended Realms of Rationality.—Lectures. T., Th., S., 8:30-9:30, *second semester.* Professor Hancock.

Omitted in 1911-12.

MATHEMATICS (APPLIED).

Professor Slocum.

PRIMARILY FOR GRADUATES.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. M., 4:00-5:00; Th., 4:00-6:00, *first semester.* Professor Slocum.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with applications to problems in heat, electricity, potential, elasticity, etc. Th., 4:00-6:00; S., 9:30-10:30. *second semester.* Professor Slocum.

16a. Theoretical Mechanics.—A modern treatment of analytical mechanics intended especially for advanced students in engineering and physics. The course is given by lectures, supplemented by references to standard texts. *First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

Omitted in 1911-12.

16b. The Mathematical Theory of Elasticity.—A course in the mechanics of elastic bodies, supplementary to Course 16a. The course is given mainly by lectures, supplemented by references to the works of Williamson, Webster, and A. E. H. Love. *Second semester,* M., 4:00-5:00; Th., 4:00-6:00.
Omitted in 1911-12. Professor Slocum.

30. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to work done. Hours by special arrangement. Professor Slocum.

26a. The History and Teaching of Mathematics.—A course in the pedagogy of mathematics, with special reference to recent developments along industrial and cooperative lines. *First semester,* Th., 4:00-6:00; S., 9:30-10:30.

Courses 30 and 26a, and either 11b or 10a will be given in 1911-12.

PATHOLOGY AND BACTERIOLOGY.

Professor Woolley, Associate Professor Wherry.
Dr. Goosman.

9. Research.—Open to any qualified person after consultation with the head of the department.

PHILOSOPHY.

Professor Tawney.

FOR UNDERGRADUATES AND GRADUATES.

3a. Ancient and Medieval Philosophy.—An historical and critical account of the typical world views of ancient Greece and Rome, together with a brief study of the course of philosophical and scientific thought in the Middle Ages. This course is of interest to undergraduates chiefly because the philosophical speculations of youth and of the untrained masses of people are found in this period of history. *First semester,* M., W., F., 9:30-10:30. Professor Tawney.

Course 3a is open to students who have completed at least one year of University work.

4b. Modern Philosophy.—An historical account of the transition from medieval to modern philosophy; the beginnings of scientific freedom, followed by a study of the intellectualism and empiricism of the seventeenth century; the critical philosophy of Kant; transcendentalism in Germany, England, and America; agnosticism and positivism; the evolution philosophy; absolute idealism, realism, and pragmatism. *Second semester,* M., W., F., 9:30-10:30. Professor Tawney.

Course 4b is open to students who have completed at least one year of University work. Students are advised to take 3a before entering 4b.

5b. Ethics.—This is an introductory study of the moral ideas and institutions of man with some reference to the relation between morality on the one side, and political and ecclesiastical sanctions on the other. It begins with the origin and growth of morality in the race and the individual, and includes some account of the moral problem of our present society. *Second semester,* M., W., F., 10:30-11:30. Professor Tawney.

Course 5b is open to students who have completed at least two years of University work.

6a. Political Philosophy.—A study of the principles of political organization, including the origin of the state, the relation of morality to legislative enactment, the concepts of natural law, natural right, the general will, and the rule of majorities. *First semester,* M., W., F., 10:30-11:30. Professor Tawney.

Course 6a is open to students who have completed at least two years of University work.

8b. Principles of Science and the Theory of Scientific Method.—This course begins with a rapid review of Course 1a and includes an outline of the method of science in general and special study of the methods of special groups of sciences, such as the mathematics, biology, physics, psychology. Some reference will be made to relations between scientific method and the method of judgment in other than scientific fields. *Second semester,* M., W., F., 11:30-12:30. Professor Tawney.

Prerequisite: Course 1a.

Alternates with Course 9b.

9b. Introduction to Philosophy.—A systematic outline of the subject of philosophy with discussions of some fundamental problems. *Second semester,* M., W., F., 11:30-12:30. Professor Tawney.

Alternates with Course 8b.

PRIMARILY FOR GRADUATES.

7. Types of Epistemology and Metaphysics.—A critical study of idealism, realism, agnosticism, and pragmatism as exemplified in the writings of modern, chiefly nineteenth century writers: T. H. Green, F. H. Bradley, Josiah Royce, William James, John Dewey, Herbert Spencer, Auguste Comte, Lotze, G. E. Moore, Woodbridge, and others. Two hours, throughout the year. Th., 11:30-1:30. Professor Tawney.

Omitted in 1911-12; given in 1912-13.

9. Ethical and Epistemological Problems.—A study of the problems of ethics and epistemology from the standpoint of evolution. Th., 12:30-2:30. Professor Tawney.

Prerequisite: Courses 1a, 3a, and 4b, or their equivalents.

Omitted in 1911-12; given in 1912-13.

10. English Empiricism in the Eighteenth Century.—A study of the most important of the philosophical works of Hobbes, Locke, Berkeley, and Hume, with especial reference to their influence on nineteenth century thought. T., 12:30-2:30.
Professor Tawney.

Omitted in 1911-12; given in 1912-13.

12a. Philosophical Method.—A study of the logic of certain typical philosophical tendencies and of the group of philosophical disciplines. The theme of the course might be called the methodology of reflection. *First semester,* W., 8:30-9:30, 10:30-11:30. Professor Tawney.

13. The Development of Kant's Philosophy.—The course will involve a critical study of Kant's writings in historical sequence. Two hours throughout the year. Th., 12:30-2:30.
Professor Tawney.

PHYSICS.

Professor More, Associate Professor Ives,
Assistant Professor Allen.

The Department of Physics occupies the first floor and the larger part of the basement of Cunningham Hall. The former contains lecture and recitation rooms, offices, library and general laboratories. In the basement are the shops and a number of small rooms fitted for advanced work.

The department is supplied with modern apparatus for illustrating lectures, and for both general and advanced laboratory work. The stock is also being largely increased. A skilled mechanician is employed in making and repairing apparatus. Every facility will be offered students requiring specially constructed apparatus.

The library of the department contains the best works in Physics, and the important journals are on file.

FOR UNDERGRADUATES AND GRADUATES.

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30. Professor More.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester.* T., Th., S., 11:30-12:30.
Omitted in 1911-12. Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester.* T., Th., S., 11:30-12:30. Omitted in 1911-12. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit given according to work done. Associate Professor Ives.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Mr. Evens.

17a. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *First semester.* M., W., 4:00-5:00. Omitted in 1911-12. Associate Professor Ives.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester,* twice weekly. Assistant Professor Allen. Omitted in 1911-12.

FOR GRADUATES ONLY.

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1910-11 the lectures discuss the theory of heat and generalized coordinates; 1911-12, light; 1912-13, electricity and magnetism. Twice weekly. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and the assistance of the Mechanician is at their disposal. Daily.
Professor More, Associate Professor Ives, and Assistant Professor Allen.

PHYSIOLOGY.

(The Joseph Eichberg Professorship.)

Professor Fischer, Dr. ————.

7. Research.—Open to any qualified person after consultation with the head of the department.

POLITICAL AND SOCIAL SCIENCE.

Professor Brooks.

FOR UNDERGRADUATES AND GRADUATES.

4. Political Parties and Party Problems.—A study of the organization, methods, and aims of existing political parties in the United States. The following subjects will be discussed: journalism and public opinion, theory of the party system, primary and convention system, permanent party organization, the financing of parties, elements of cohesion in parties, and the principal recent aims pursued by political parties. T., Th., 2:00-3:00. Professor Brooks.

6a. American Legislatures and Legislative Methods.—A detailed study of the manner in which law-making bodies—State and Federal—in the United States are organized and operated. *First semester,* M., W., 2:00-3:00. Professor Brooks.

6b. Public Finance and Taxation.—An introductory course on the budget system and existing methods of levying and collecting taxes, federal, state and local; the principles of taxation. *Second semester,* M., W., 2:00-3:00. Professor Brooks.

7. Modern Sociology.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Schaeffle, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, and others. Particular attention is given to the consequences of the theories of these writers in the field of practical social reform. T., Th., 2:00-3:00. Omitted in 1911-12. Professor Brooks.

11a. Municipal Government.—A comparative study of municipal government in the principal countries of Europe, England, and the United States, with particular reference to the reforms advocated in the latter country. Special financial and social problems of city life, such as municipal ownership, taxation of unearned increment, the drift of population to urban centers, the housing problem, sanitation, provision of facilities for recreation, the child problem in cities, etc., are also discussed. *First semester,* T., Th., 1:00-2:00. Professor Brooks.

12b. The Government of Cincinnati.—A somewhat detailed study of the organization and functions of the government of Cincinnati. Particular attention is given to the special municipal problems involved in the contemporary development of the city, and to the relations existing between its government and the government of the state of Ohio and Hamilton County. *Second semester,* T., Th., 1:00-2:00. Professor Brooks.

17. Selected Readings and Field Work.—Designed to afford opportunity for the more thorough study of the subjects considered in the preceding courses, but may be elected separately by students who have already completed one full year's work either in the department of Political and Social Science or in the

department of Economics. Special attention will be given to bibliography, statistical presentation, and the preparation of reports in standard form. F., 2:00-3:00. Professor Brooks.

Course 17 is recommended for students who have elected Courses 4b, 11a, 12b, and 15. Credit, one or two hours.

PRIMARILY FOR GRADUATES.

3. History of Political Ideas.—A study of the development of political thought. The first part of the course is devoted to a series of lectures on Oriental, Greek, Roman, and medieval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date are studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times will receive special attention. M., 4:00-6:00. Professor Brooks.

Omitted in 1911-12.

19. Political Science Seminary.—A detailed study of the administrative organization of France and Germany. Special topics will be assigned for investigation and report by members of the seminary. Particular attention will be given to the proper pedagogical presentation of these subjects in lecture or text book form. A reading knowledge of French or German is required. M., 4:00-6:00. Professor Brooks.

PSYCHOLOGY.

Professor Breese.

The department occupies two rooms on the second floor of McMicken Hall. One of these rooms is devoted to the laboratory, which is equipped with the apparatus necessary for carrying out the typical experiments in experimental psychology. The aim of the courses in this department is to give a comprehensive account of the facts of mental life and the methods of investigating them, and to point out the stages of mental development in the race and in the individual. For teachers and those intending to teach there are offered special courses dealing particularly with mental development and the application of psychology to education.

FOR UNDERGRADUATES AND GRADUATES.

2a. Experimental Psychology.—Laboratory course. *First semester.* M., W., F., 9:00-11:30.
Professor Breese and Assistant.

2b. Experimental Psychology.—A continuation of 2a. *Second semester,* M., W., F., 9:00-11:30.
Professor Breese and Assistant.

PRIMARILY FOR GRADUATES.

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged. Professor Breese.

6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester,* M., W., F., 2:00-3:00. Professor Breese.

ROMANCE LANGUAGES.

Professor Ogden, Assistant Professor Umphrey.

FOR UNDERGRADUATES AND GRADUATES.

4. French Poetry in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Hugo, Musset, Gautier, Leconte de Lisle, etc. T., Th., 9:30-10:30.
Professor Ogden.

Course 4 is open to students who have passed in Course 11.

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Cervantes, *Don Quijote;* selected plays of Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. T., Th., 10:30-11:30.
Assistant Professor Umphrey.

Course 8 is open to students who have passed in Course 6.
Omitted in 1911-12.

10. Historical French Grammar.—A study of the successive changes the French language has undergone in pronunciation, inflection and syntax. Handbook; Schwan—Behrens, *Grammaire de l'Ancien Français.* Professor Ogden.

Course 10 is open to students who have passed in Course 4.

13. French Literature in the Eighteenth Century—Montesquieu, Voltaire, Diderot, J. J. Rousseau. Reading of selected works, lectures, reports. This course is given wholly in French. T., Th., 9:30-10:30. Professor Ogden.

Course 13 is open to students who have completed Course 4.

22. Spanish Literature in the Nineteenth Century.—Selected texts and collateral reading; composition; lectures. The following representative works are read: Caballero, *La familia de*

Alvareda; Valera, *El Commendador Mendoza;* Alarcón, *El Sombrero de tres picos;* Galdos, *Doña Perfecta;* Tamayo y Baus, *Un drama nuevo;* Zorilla, *Traidor, inconfieso, y martir;* Nuñez de Arce, *El Haz de lena;* Echegaray, *O locura ó santidad;* Espronceda, Béquer, Campoamor, *Poesías escogidas.* T., Th., 10:30-11:30.
Assistant Professor Umphrey.

Course 22 is open to students who have passed in Course 6

15. Dante.—The *Vita Nuova* (Barbi edition), the *Inferno* (Grandgent edition), and the *Purgatorio.* Lectures, collateral reading, and reports. T., Th., 9:30-10:30.
Assistant Professor Umphrey.

Course 15 is open to students who have passed in Course 7.

24. Special Studies in Modern French Literature.—Alfred de Vigny; Alfred de Musset. T., 4:00-6:00.
Assistant Professor Umphrey.

Course 24 is open to students who have passed in Course 4 or Course 11.

26. Criticism in the Nineteenth Century.—Mme. de Stael; Ste. Beuve; Taine; Modern Schools.

27. The French Drama of the Nineteenth Century.—The semi-romantic, Romantic Schools. School of Good-sense. S., 10:30-11:30. Professor Ogden.

PRIMARILY FOR GRADUATES.

12. Old French.—Old French phonology and inflections; versification. Lectures, text interpretation and collateral reading. Th., 2:30-4:30. Professor Ogden.

Course 12 is open to students who have passed in Course 4.

14. Early Spanish.—Phonology and inflections. *El poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged. Assistant Professor Umphrey.

Course 14 is open to students who have passed in Course 8 or 22.

Omitted in 1911-12.

19b. Provençal Language and Literature.—Reading of Provençal texts, especially the poetry of the Troubadours. Textbooks: Carl Appel, *Provenzalische Chrestomatie* (2d ed., Leipzig, 1902); Grandgent, *An Outline of the Phonology and Morphology of Old Provençal.* T., 2:00-4:00. Professor Ogden.

17. Seminary.—The Development of the Epistolary Genre. S., 8:30-10:30. Professor Ogden.

28. Beginnings of the French Drama in the Middle Ages.—Lectures and private reading. F., 2:00-4:00.

Professor Ogden.

25a. Phonetics.—A general introduction to linguistic science. A systematic study of the organs of speech, followed by an examination of the most important sounds in modern languages, especially English, French, and German. A phonetic alphabet will be used, and students will be given practice in phonetic transcription. Half course, *first semester*. Hours to be arranged.

Assistant Professor Umphrey.

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UNIVERSITY OF ILLINOIS

UNIVERSITY OF CINCINNATI RECORD

PRESIDENT'S OFFICE

SERIES I JANUARY, 1912 VOL. VIII, No. 3

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1912-1913

UNIVERSITY OF ILLINOIS

RECEIVED
MAY 23 1912
PRESIDENT'S OFFICE
UNIVERSITY OF ILLINOIS

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

UNIVERSITY OF ILLINO
PRESS OFFICE

UNIVERSITY OF CINCINNATI RECORD

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TABLE OF CONTENTS

PART I

GENERAL STATEMENT

Calendar, ... 7
Departments of the University, ... 8
Administrative Officers, ... 9
General Information:
Foundation, ... 10
Buildings and Site, ... 12
Benefactors of the University, ... 12
Endowment Fund Association, ... 13
Benefactions, ... 13
University Library, ... 14
Publications, ... 16
Museums, ... 16
Fellowships, Scholarships, and Prizes, ... 17
Alliance Française, ... 19
Athletics, ... 19
Carson Field, ... 19
Physical Training for Women, ... 20
Student Organizations, ... 20
Admission:
Special Students, ... 21
Students Entering from Other Colleges and Universities, 21
Admission to Advanced Standing, ... 21
Registration, ... 21
General Regulations, ... 22
Fees:
Tuition, ... 24
Special and Irregular Students, ... 24
Special Courses for Teachers, ... 24
Laboratory Fees, ... 24
Graduation Fees, ... 25
Breakage Deposits, ... 25
Course for Teachers of Art, ... 25
Miscellaneous Fees, ... 25
Expenses, ... 25

PART II

THE GRADUATE SCHOOL

Faculty, ... 27
Admission, ... 28
Instruction, ... 28
Requirements for the Degree of Master of Arts, ... 29
Requirements for the Degree of Doctor of Philosophy, . . 29

Admission to Advanced Standing, ... 30
Special Arrangement for Graduate Students in Lane Seminary and in the Hebrew Union College, ... 31
Fellowships and Scholarships, ... 31
Courses of Instruction:
Anatomy, ... 32
Astronomy, ... 32
Biology, ... 32
Chemistry, ... 33
Economics, ... 34
Education, ... 34
English, ... 34
Geology and Geography, ... 35
German, ... 35
Greek, ... 35
History, ... 35
Latin, ... 36
Mathematics, ... 36
Mathematics (Applied), ... 36
Pathology and Bacteriology, ... 37
Philosophy, ... 37
Physics, ... 37
Physiology, ... 38
Political and Social Science, ... 38
Psychology, ... 38
Romance Languages, ... 38

PART III

McMICKEN COLLEGE OF LIBERAL ARTS

Faculty, ... 39
Requirements for Admission, ... 41
Entrance Conditions, ... 42
Entrance Examinations, ... 42
Schedule of Entrance Examinations, ... 43
Definitions of Units in Subjects Required for Entrance:
English, ... 44
Latin, ... 45
Greek, French, ... 46
German, ... 47
Spanish, Mathematics, ... 49
Physics, Chemistry, ... 51
Zoology, Botany, ... 53
Botany and Zoology, ... 54
Physical Geography, ... 54
Astronomy, Geology, History, ... 55
Civics, Drawing, Manual Training, ... 56
Domestic Science, ... 57
Admission on Certificate from Accredited Schools, ... 57
List of Accredited Schools, ... 57
List of Recognized Schools, ... 59

Accredited Schools of the North Central Association, . . 59
Requirements for the Bachelor of Arts Degree, ... 59
Election of Studies, ... 61
Special Arrangements:
Credit for Work Done in the College of Law, ... 61
Seven-Year Combined Collegiate and Medical Course, . . 62
Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary, ... 62
Credit for Work Done in the Art Academy of Cincinnati, 62
Credit for Work Done in the College for Teachers, . . . 62
Courses of Instruction:
Astronomy, ... 63
Biblical Literature, ... 63
Biology, ... 64
Chemistry, ... 69
Economics, ... 75
Education, ... 76
English, ... 77
Geology and Geography, ... 81
German, ... 83
Greek, ... 85
History, ... 87
Latin, ... 89
Mathematics, ... 91
Philosophy, ... 94
Physical Education, ... 96
Physics, ... 97
Political and Social Science:
Social Science, ... 99
Political Science, ... 101
Psychology, ... 103
Romance Languages, ... 104
Drawing, Modeling, and Carving, ... 107

PART IV

COLLEGE FOR TEACHERS

Committee in Charge, ... 109
Faculty and Instructors, ... 109
General Statement, ... 110
General Regulations:
Program I, ... 110
Program II, ... 111
Program III, ... 113
Program IV, ... 113
Program V, ... 114
Program VI, ... 115
Special Courses for Teachers, ... 115
Requirements of the Cincinnati Board of Education, . . . 115
Appointment Committee, ... 115

Courses of Instruction:
Education, ... 116
Biology, ... 119
Geology and Geography, ... 120
History, ... 121
Philosophy, ... 121
Psychology, ... 122
Courses in Kindergarten Training, ... 123
Courses for Teachers of Art, ... 125

CALENDAR

1912

Sept. 16, Monday.	Examinations for entrance to the College of Liberal Arts begin.
Sept. 19, Thursday. Sept. 20, Friday. Sept. 21, Saturday.	Registration days for the College of Liberal Arts and the College for Teachers.
Sept. 21, Saturday.	Entrance examinations end.
Sept. 23, Monday.	First semester begins for the College of Liberal Arts and the College for Teachers.
Sept. 23, Monday.	First registration day for the Graduate School.
Sept. 28, Saturday.	Last registration day for the Graduate School.
Nov. 28, Thursday.	Thanksgiving Day: a holiday. Recess of three days.

Recess from December 23, 1912, to January 4, 1913, Inclusive.

1913

Jan. 6, Monday.	Work resumed in all departments of the University.
Feb. 6, Thursday.	First semester examinations end.
Feb. 7, Friday.	Registration day for the second semester of the College of Liberal Arts and of the College for Teachers.
Feb. 10, Monday.	Second semester of the College of Liberal Arts and the College for Teachers begins.
Feb. 10, Monday. Feb. 11, Tuesday. Feb. 12, Wednesday.	Registration days for the second semester of the Graduate School.
Feb. 22, Saturday.	Washington's Birthday: a holiday.
May 2, Friday.	Oratorical contest for Jones Prizes.
May 30, Friday.	Memorial Day: a holiday.
June 13, Friday.	Second semester ends.
June 14, Saturday.	University Commencement Day.

DEPARTMENTS OF THE UNIVERSITY

The University comprises the following departments:

GRADUATE SCHOOL,

McMICKEN COLLEGE OF LIBERAL ARTS,

COLLEGE FOR TEACHERS,

COLLEGE OF ENGINEERING: Departments of Mechanical, Civil, Metallurgical, and Chemical Engineering,

COLLEGE OF MEDICINE (The Ohio-Miami Medical College and the Clinical and Pathological School of the Cincinnati Hospital).

For special announcements of the various departments and for further information, address:

THE SECRETARY OF THE UNIVERSITY
CINCINNATI, OHIO

ADMINISTRATIVE OFFICERS

OF

THE GRADUATE SCHOOL, THE COLLEGE OF LIBERAL ARTS, AND THE COLLEGE FOR TEACHERS

CHARLES W. DABNEY, Ph. D., LL. D., President of the University.
Office, 10 McMicken Hall.

JOSEPH E. HARRY, Ph. D., ... Dean of the Graduate School.
Office, 4 McMicken Hall.

LOUIS T. MORE, Ph. D., . . . Dean of the College of Liberal Arts.
Office, 5 McMicken Hall.

WILLIAM P. BURRIS, A. M., L. H. D., Dean of the College for Teachers.
Office, 2 McMicken Hall.

EMILIE WATTS MCVEA, A. M., ... Dean of Women.
Office, 12 McMicken Hall.

JERMAIN G. PORTER, Ph. D., ... Director of the Observatory.
The Observatory, Mt. Lookout.

HENRY S. WEST, Ph. D., ... Director of School Affiliation.
Office, 10 McMicken Hall.

EDWIN W. GLOVER, ... Director of Music.

ALFRED BRODBECK, ... Director of Physical Education.
Gymnasium Building.

DANIEL LAURENCE, B. S., ... Secretary of the University.
Office, 6 McMicken Hall.

CHARLES ALBERT READ, . . Librarian of the University Library.
Van Wormer Library Building.

LELIA AMANDA GARVIN, B. L., ... Registrar.
Office, 7 McMicken Hall.

GENERAL INFORMATION

FOUNDATION

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869, the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile, an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874, the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the main-

tenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati. Then, in 1910, the friends of Dr. Joseph Eichberg, for many years an eminent Professor of Physiology in the Miami Medical College, who lost his life through a lamentable accident in the summer of 1908, presented the University with the sum of $45,000, to establish in the University the Joseph Eichberg Chair of Physiology. In 1911, Dr. Francis Brunning bequeathed his entire estate, with the exception of a few minor bequests, to the Endowment Fund Association of the University of Cincinnati, for the College of Medicine. This estate is expected to yield from $80,000 to $100,000. In 1912, Mrs. Floris A. Sackett and Mrs. Frances W. Gibson made bequests to the University, the exact value of which has not yet been determined.

New departments were also added. In 1872, the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896, the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908, an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati."

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken College of Liberal

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* For this purpose the city levies annually a special tax of one-twentieth of one mill.

Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as before.

BUILDINGS AND SITE

From 1875 to 1895, the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96, the north wing, known as Hanna Hall, was built for the Departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the Departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchell Building, was added in 1904 to house the old telescope. Since 1896, the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. A gymnasium, power plant, and engineering building, provided by the city, at a cost of $550,000, were completed in December, 1911.

BENEFACTORS OF THE UNIVERSITY

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Procter, Rev. Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Judge Moses F. Wilson, Eugene F. Bliss, Dr. James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, Rev. P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Charles Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, Professor Edward Miles Brown, Dr. Nathaniel Pendleton Dandridge, Mrs. Howard

Breen, Mr. Robert William Hochstetter, Mrs. R. N. Hollingshed, Mr. Davis L. James, Miss Catherine M. James, Miss Ellen W. James, Miss Annie A. James, Mr. and Mrs. O. J. Renner, Mrs. Antonia Wendte, Miss Mary E. Dandridge, Mrs. Joseph Eichberg, the alumni of the University, and others.

ENDOWMENT FUND ASSOCIATION

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

FORM OF BEQUEST TO THE UNIVERSITY OF CINCINNATI:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

FORM OF BEQUEST TO THE ENDOWMENT FUND ASSOCIATION:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the build-

ing. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the Fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any question relating to foundation to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The library is open every week day from 8 A. M. to 5 P. M.

The University Library, in this building, contains about 63,000 volumes and 10,000 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The library is provided with a card catalogue of its own books, and also with card catalogues of the books received since 1905, by the Public Library of Cincinnati.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by Mr. Theodore A. Bruehl.

The Wilson Library, consisting of works of English, French, and Italian literature, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts, and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown, was presented to the University by Mrs. Edward Miles Brown. It consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, at present about 700 volumes, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The library has many volumes on history and economics, purchased from the proceeds of an endowment provided in 1894 by the will of Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has rooms for its valuable collections of books, pamphlets, and other articles in the Van Wormer Library. This collection comprises over 24,000 volumes and 68,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts. Students of the University have access to this library and may withdraw books from it under certain conditions.

The total number of books, including duplicates, in the Van Wormer Library Building is about 90,000 volumes and 78,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Medicine	3,000 volumes
Total	6,500 volumes

The libraries of the University, excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 69,500 volumes and 10,000 pamphlets.

The Public Library, of 384,912 volumes; the Mercantile Library, containing about 78,625 books; and the Lloyd Library and Museum,

consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum and the College of Music, are open to University students.

PUBLICATIONS

The official publications of the University are as follows:

THE UNIVERSITY RECORD. This publication is issued at intervals during the year and comprises the President's Annual Report, the Annual Catalogue, and Announcements of the Graduate School, College of Liberal Arts, College for Teachers, College of Engineering, and College of Medicine.

THE UNIVERSITY STUDIES. This publication is issued bi-monthly, and contains the results of research by members of the faculty or by other persons connected with the University of Cincinnati. A price list of the different numbers of this publication may be obtained by addressing the office of the Press.

Student publications of the University are as follows:

THE CINCINNATIAN. The Cincinnatian is the University Annual, and is edited and published by the members of the Junior Class.

THE UNIVERSITY WEEKLY NEWS. This paper is the official student bulletin, and is issued every week during the University year by a student board of editors.

MUSEUMS

The Museum of Natural History consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous rocks; the Wetherby collection of rocks and minerals; and lastly, a series of specimens illustrating the chemical industries. The Department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks and fossils. Among recent valuable additions are the U. P. James collection of fossils and minerals, the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch I. Carson; and several group mounts of large animals by the custodian of the Museum.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of the "Winged Victory," "Aphrodite of Melos," "Faun Playing the Flute," "Esquiline Venus," "Capitoline Venus," and a pediment of the temple of Zeus at Olympia. Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main

corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, Corinth and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

THE GRADUATE SCHOOL

The D. A. R. Fellowship in American History. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

The Fellowship in History of the Colonial Dames in the State of Ohio was established in 1906 by the Society of Colonial Dames, and yields an income of $300 a year.

The Hanna Fellowship in Physics. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

The Alliance Française Scholarship, of $300, was established in 1904 by the Alliance Française of the City of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

The Armstrong-Hunter Memorial Fund, valued at $1,000, was established in 1910 in memory of Miss Sarah J. Armstrong and Miss Clara Hunter, by eighty of their former pupils. This fund will be used to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

In addition to the above, the University offers ten scholarships in several departments which exempt their holders from the payment of tuition fees.

THE McMICKEN COLLEGE OF LIBERAL ARTS

The Cornelius George Comegys Scholarship, with an income of fifty dollars, was founded in 1899 by the Old Endowment Fund Association, which was composed of the alumni of the University. This scholarship is awarded annually to a meritorious undergraduate.

The McMicken Honorary Scholarships are awarded annually to the five Juniors who have the best scholastic standing, according to the records in the Registrar's office.

The Thoms Honorary Scholarships are awarded annually to the six Sophomores and the six Freshmen who have the best scholastic records.

The Julius Fleischmann Scholarships. Thirteen scholarships

of $75 each, offered for the years 1909-10, 1910-11, 1911-12, by ex-Mayor Julius Fleischmann. They cover the first year's tuition, in the College of Liberal Arts, of thirteen non-residents, who are members of the graduating classes of the accredited schools outside of Cincinnati.

The Optimist Club Scholarships. Two scholarships of $75 each, offered in 1910, for four succeeding years, by a resident of Cincinnati who wished his identity to remain unknown. According to the wishes of the donor, these scholarships will be awarded in the College of Liberal Arts to non-resident students who have attended the University for at least one year and need assistance.

The Jones Prizes. The first Jones Prize of forty dollars was founded in 1892 by the Honorable Frank J. Jones, and is awarded annually to that member of the senior class in the College of Liberal Arts who writes and pronounces the best English oration. The subjects are chosen by the Dean and the Chairman of the Board of Directors. A committee consisting of three citizens of Cincinnati is appointed by the Chairman of the Board of Directors to judge the contest. The second Jones Prize of twenty dollars was founded by Mr. Jones in 1901. It is awarded to that member of the senior class whose oration is judged by the committee to be second in merit. These prizes are permanently endowed.

The Edward Miles Brown Prize for Excellence in English. This prize of fifty dollars was established in 1908, by a provision of the will of the late Professor Edward Miles Brown. It is awarded annually to that member of the senior class who has attained the highest excellence in English during his four years' undergraduate course.

The Henry Hochstetter Prize in Chemistry. This prize was established in 1909 by Mr. Robert Hochstetter, of the Class of 1895, in memory of his brother, Henry Hochstetter. It is to be awarded annually for the best graduating thesis in Chemistry, and is open to both students of Liberal Arts and Engineering. The successful candidate is nominated by a committee consisting of the head of the Department of Chemistry and two members of the Cincinnati Section of the American Chemical Society.

The Robert Patterson McKibbin Memorial Prize, a gold medal of the value of twenty-five dollars, was established in 1911 by the Reverend William McKibbin and family, in memory of their son Robert Patterson McKibbin, who died in 1910, while a member of the junior class of this University. This prize aims to hold up before the male students of the University the ideals of manhood. It will be awarded to that young man of the senior class who, in the judgment of the faculty, is the best embodiment of these ideals.

For the fellowships, scholarships, and prizes of the various colleges, consult their several announcements.

THE ALLIANCE FRANÇAISE

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students of the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of three hundred dollars in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

ATHLETICS

Athletics are so controlled in the University that they play an important part in the college life of the student without seriously conflicting with his interest in class-room work.

All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: three hours per week for all members of the freshman class, and two hours per week for all members of the sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A large part of the work is done out of doors during good weather, and such games as football, baseball, basket ball, tennis and track athletics are a part of the students' training. Lessons in boxing, wrestling, and fencing are also given to students interested in this form of exercise.

All athletics and gymnastics are in charge of the Director of Physical Education and his assistants.

CARSON FIELD

An Athletic Field has recently been provided, which is one of the best college athletic fields in the country. One end has a baseball diamond, the other a football gridiron. The track is one-fourth mile, built of cinder, with deep foundation. A straight-away one hundred and twenty yards, twenty-four feet wide, extends in front of the new grand stand. The proximity of this field to the gymnasium makes it a particularly valuable addition to the athletic equipment of

the University. Its location between three hilltops, which form a natural amphitheater, affords opportunity for thousands of people to view the games.

The new gymnasium with its modern equipment—cork-covered running track, white-tiled swimming pool, and spacious locker rooms—is the most complete institution of its kind in the West.

PHYSICAL TRAINING FOR WOMEN

A special instructor has charge of the work in Physical Training for young women, which is required during the Freshman and Sophomore years. The work in the gymnasium is supplemented during the fall and spring with outdoors games.

STUDENT ORGANIZATIONS

The following student organizations met regularly throughout the academic year, 1911-12:

The Academic Club, composed of the men of the College of Liberal Arts; Blue Hydra, a permanent organization devoted to the study of Biology; The Chemical Journal Club; The Chemist's Club; The Co-op Club; The Debating Council; The French Club; The German Club; The History Club; The Literary Society; Men's Glee and Mandolin Clubs; The Speaker's Club, an oratorical and debating society composed entirely of young men; The Student Section of the American Society of Mechanical Engineers; The Student Section of the American Institute of Electrical Engineers; The University Club, composed of representatives from the student clubs, the fraternities, and the four classes; Women's Glee Club; A chapter of the Y. W. C. A.

The Woman Student's League is an organization open to all women students of the University and to the women of the faculty. Regular meetings are held, at which lecturers of note address the members on subjects connected with the general and economic interests of women.

A Student Tribunal for Self-Government exists in the College of Engineering. It consists of five members—three seniors and two juniors.

Membership in the Three Arts Club of Cincinnati is open to women students in the College of Liberal Arts.

ADMISSION

Special Students.—Persons at least twenty years of age and qualified to do University work may be admitted as special students to lectures and laboratory courses in the College of Liberal Arts and in the College for Teachers. They will be required to furnish documentary evidence to the Director of School Affiliation, and to satisfy the heads of the departments concerned, of their ability to carry on successfully the courses which they desire to enter.

Before any special student may become a candidate for a degree he must satisfy the entrance requirements. All special students are amenable to the same regulations as apply to regular students in matters of examination, probation, discipline, etc.

Students Entering from Other Colleges and Universities.—An undergraduate of a college or university desiring to enter the McMicken College of Liberal Arts or the College for Teachers must present to the Director of School Affiliation satisfactory evidence that he has done a sufficient amount of preparatory work to meet the regular entrance requirements, together with a certificate of honorable dismissal from the college or university last attended. He will be given credit for work of university grade in accordance with the provision for "Admission to Advanced Standing."

Admission to Advanced Standing.—Students may be admitted to advanced standing upon presentation of a certificate from a college of approved standing. All applications for advanced standing must be made within three weeks after matriculation to the Director of School Affiliation, and must be accompanied by a statement of the work done, signed by the proper officials of the college from which the applicant comes, and by a marked copy of the catalogue or by a written description in detail of the courses for which advanced credits are desired. In courses where note books or drawings or both are required, these also must be presented. The students applying for advanced standing must first have satisfied the entrance requirements the same as regular students.

REGISTRATION

New students will register in 1912 on Thursday and Friday, September 19 and 20; upper classmen on Saturday, September 21. In 1913 they should register on Friday, February 7. Students registering on any other days than those designated above will be required to pay a registration fee of one dollar.

No person will be admitted to any course after the beginning of the semester, unless a good and sufficient excuse for not entering at the opening of the semester be presented to the Dean; and *in no event will any person be permitted to enter the work of any semester after the close of the third week of that semester.* In accordance

with this regulation no person will be admitted to the work of the first semester of 1912-13 after October 12, 1912; for the second semester, the last day of admission will be March 1, 1913.

New Students.—A student shall (1) take to the Advisory Committee for Freshmen the Certificate of Admission received from the Director of School Affiliation and, after consultation, fill out the Course Card received from the Committee; (2) take the Certificate of Admission and the Course Card to the Registrar; (3) pay the library fee (also tuition and laboratory fees when such are required) to the Clerk of the Board; (4) get a receipt for matriculation from the Clerk of the Board; (5) file the Course Card received from the Advisory Committee in a box prepared for that purpose in the Registrar's office.

Upper Classmen should fill out the registration blank and present it to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk. After paying the library fee (also tuition and laboratory fees, when such are necessary), upper classmen should take the clerk's receipts to their respective Deans, and receive their Course and Schedule Cards. The young men will obtain these cards from the Dean of the College of Liberal Arts, and the young women from the Dean of Women.

On the Course Card each course must be designated by the department and the number of the course, especial title, and the number of hours' credit, e. g.:

English 1: Rhetoric and Composition..... 3
Mathematics 1: Algebra, Trigonometry, and
Analytical Geometry 4

In filling out election blanks especial care should be taken to note the advertised hours of courses, in order that conflicts may be avoided.

All students who expect to become teachers should confer with the Dean of the College for Teachers before filling out their Course Cards.

No change will be permitted on the Course Card after the expiration of three days from the last day of registration.

All Course and Schedule Cards must be filled out and deposited in the boxes provided for that purpose before four o'clock on the last registration day.

GENERAL REGULATIONS

Each student shall, at the beginning of the year, leave his local address at the office of the Registrar and shall promptly report all subsequent changes of address.

Unit of Instruction.—The unit of instruction is one hour per week for one semester. Two and one-half hours of actual work in the laboratory, shop, or drafting-room, are considered equivalent to one recitation hour and the preparation therefor. Credit will be given for the number of hours officially published with the course, and for no more. University work not regularly registered is forbidden.

Absences in the College of Liberal Arts.—All absences of students, from any cause whatsoever, are recorded in the Registrar's office. If thirty or more absences are recorded against a student, two extra credits must be made in order to obtain the A. B. degree. No absences are excusable except those incurred by students representing the University in some public exercise outside of the city. Application for these excuses must be made to the Dean in advance.

Probation.—A student in the College of Liberal Arts who receives a grade below D in one-half of his work at the mid-term, or at the end of any semester, shall be put upon probation for the next half semester of college work. Such a student, if similarly delinquent at the end of his probation, shall cease to be a member of the University.

If it shall be necessary to place a student upon probation a second time, after an interval has elapsed since the first time, it shall be within the power of the Dean to dismiss the student the moment his grades fall below D in one-half of his work.

Grades.—The scale of marks for recording grades is as follows: A, 90-100; B, 80-89; C, 70-79; D, 60-69, passed; E, 50-59, conditioned; F, 0-49, failed.

In case a student withdraws from the University during any semester, credit will not be given for any of the work elected for that semester.

Honorable Dismissal.—It is required as a condition for honorable dismissal, that every student who wishes to withdraw from the University shall submit to the Registrar a written request to that effect.

A copy of the "Rules for the Guidance of Students" may be obtained at the Secretary's office.

FEES

Tuition in the Graduate School, the College of Liberal Arts, and the College for Teachers is free to regular students who are residents of Cincinnati.

All fees must be paid *in advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Dean is authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

Tuition Fees

All regular non-resident students in the College of Liberal Arts and in the College for Teachers are charged a tuition fee of $75.00 per year, payable in installments of $37.50 per semester. If not paid during registration days, but if paid within the two weeks succeeding the last registration day, the fee is $45.00 per semester. If not paid as above, but if paid within the following two weeks, the fee is $50.00 per semester. If not paid within four weeks after the last registration day, further attendance upon classes will be refused.

Students in the College of Liberal Arts who are residents of the City of Cincinnati, and elect any work whatsoever in the College of Engineering, are charged the full tuition fee of $37.50 per semester.

Fees for Special and Irregular Students

All special students, and irregular students (i. e., students who have satisfied the entrance requirements, but take less than twelve hours a week by special permission), in the College of Liberal Arts and in the College for Teachers, and all non-resident students in the Graduate School, are charged tuition at the rate of $3.00 per credit hour, per semester, in advance. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to $9.00 a semester, or $18.00 a year. If not paid within one week after the last registration day, an additional fee of $1.00 will be charged. If not paid within four weeks after the last registration day, attendance upon classes will be refused.

Special Courses for Teachers

Teachers enrolled in *Special Courses for Teachers* in the University, pay the regular library fee of $5.00 per year. Tuition in these courses is free (a) to all teachers in public schools who are residents of the city; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year, payable in advance.

The laboratory fee in a teacher's course is $5.00 per year.

Laboratory Fees

All laboratory fees are payable strictly *in advance.*

A student shall not be permitted to enter a laboratory course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Biology, $10.00 per semester.

Chemistry, $15.00 per semester; breakage deposit, $10.00.

Geology, $5.00 per semester; $2.50 per semester for a course having but one laboratory period per week.

Metallurgy, $7.50 per semester.

Physics, $10.00 per semester; $5.00 per semester for a course having but one laboratory period per week.

Psychology, $5.00 per semester.

Graduation Fees

All graduation fees must be paid at least two weeks before the day appointed for conferring the degree.

A graduation fee of $5.00 is charged every candidate for the degree of bachelor of arts, for the degree of bachelor of arts in education, and for an engineering degree. A graduation fee of $10.00 is charged a candidate for the degree of master of arts, and a fee of $20.00 is charged for the degree of doctor of philosophy.

Breakage Deposits

At the beginning of the year, a breakage deposit of $10.00 will be required of each student who takes chemistry. Five dollars of this amount must be kept permanently upon deposit until all accounts with the Department of Chemistry have been settled. For the remaining $5.00 a coupon ticket will be issued, with which supplies and apparatus may be obtained at the store-room. Should this coupon-ticket become exhausted, the student must purchase a new ticket ($5.00) before supplies will be issued to him at the store-room.

Course for Teachers of Art

The fees in the Special Course for Teachers of Art are as follows: matriculation fee, $5.00; tuition fee for non-residents, $18.00 (for one year's instruction in psychology and the history of education); laboratory fee, $25.00 per year; tuition fee, payable at the Art Academy, $25.00 per year.

Miscellaneous Fees

Gymnasium Fee.—A gymnasium fee of $5.00 per annum ($2.50 per semester) will be charged all men in the College of Liberal Arts, in the College for Teachers, and in the College of Engineering, taking six or more hours of work per week. The same fee will be charged all men in the Graduate School who elect twelve hours of work per week.

A fee of $5.00 per annum ($2.50 per semester) will be charged all other men in the University who desire to avail themselves of the privileges of the gymnasium.

Library Fee.—All students in the Graduate School, in the College of Liberal Arts, and in the College for Teachers, must pay a library fee of $5.00 per year at the opening of the session.

Late Registration.—Students who apply for registration or submit schedules of study on days other than those designated will be required to pay a fee of $1.00.

Special Examinations.—A fee of $1.00 will be charged for each supplemental examination for the removal of conditions, and this fee must be paid even though the condition is removed without a supplemental examination. A fee of $5.00 will be charged for entrance examinations on days other than those specified in the calendar. Every candidate who applies for the removal of a condition must present a receipt to the head of the department in which the condition was incurred, showing that the candidate has paid the fee of $1.00, before the said head of department may report the removal of a condition to the Registrar.

EXPENSES

	Graduate School Liberal Arts, or College for Teachers	Engineering	Medicine
Tuition Fees	$75 00	$75 00	$125 00
Library Fees	5 00	5 00	.....
Library and Matriculation Fee, payable each year	.....	.....	$5 00
Gymnasium Fee	5 00	5 00	5 00
Laboratory Fees	*	$35 to $45	.....
Books	$20 to $25	$25 to $30	$45 to $60
Board and Room, per week	$5 to $8	$5 to $8	$5 to $8
Total Expense per year	$325 to $450	$350 to $450	$375 to $500

The Secretary of the University will furnish information regarding suitable boarding places in the vicinity of the University. The Secretary will also make every effort to secure employment in the city for students who desire to support themselves either wholly or in part while attending the University.

* Laboratory fees vary according to the courses taken.

GRADUATE SCHOOL

FACULTY

Charles William Dabney, Ph. D., LL. D., President of the University.
Jermain Gildersleeve Porter, Ph. D., Director of the Observatory and Professor of Astronomy.
Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Civics.
Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
John Miller Burnam, Ph. D., ... Professor of Latin.
Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Joseph Edward Harry, Ph. D., Professor of Greek and Dean of the Graduate School.
Merrick Whitcomb, Ph. D., ... Professor of History.
Louis Trenchard More, Ph. D., ... Professor of Physics.
Burtis Burr Breese, Ph. D., ... Professor of Psychology.
William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education.
John William Hall, A. M., Professor of Elementary Education.
Stephen Elmer Slocum, Ph. D., Professor of Applied Mathematics.
Nevin Melancthon Fenneman, Ph. D., Professor of Geology and Geography.
Lauder William Jones, Ph. D., ... Professor of Chemistry.
Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Frank Wadleigh Chandler, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
Phillip Ogden, Ph. D., . . . Professor of Romance Languages.
Paul Gerhardt Woolley, B. S., M. D., . Professor of Pathology.
Martin Henry Fischer, M. D., Joseph Eichberg Professor of Physiology.
Henry McElderry Knower, Ph. D., . . . Professor of Anatomy.
Harris Miller Benedict, A. M., ... Professor of Botany.
Henry Skinner West, Ph. D., Professor of Secondary Education.
——— ———, ... Professor of Zoology.
——— ———, ... Professor of Political and Social Science.
George Morey Miller, A. M., . . Associate Professor of English.
Harry Shipley Fry, Ph. D., . . Associate Professor of Chemistry.
William Buchanan Wherry, A. B., M. D., Associate Professor of Bacteriology.

Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Claude M. Lotspeich, Ph. D., . Assistant Professor of German.
Emilie Watts McVea, A. M., . . Assistant Professor of English.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Edward F. Malone, A. B., M. D., Assistant Professor of Anatomy.
J. Ernest Carman, B. S., . . . Assistant Professor of Geology.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, A. M., Assistant Professor of Economics and Social Science.
——— ———, . . . Assistant Professor of Physical Chemistry.
——— ———, ... Assistant Professor of Metallurgy.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
James Francis Dilworth, A. M., . Instructor in English History.
Fred Wilbert Upson, Ph. D., ... Instructor in Chemistry.

INFORMATION FOR STUDENTS

ADMISSION

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School. Students will not be admitted to the Graduate School after the third week of the semester.

INSTRUCTION

The work of each candidate for a graduate degree shall be under the direction of an Advisory Committee, composed of the Dean of the Graduate School and the heads of the departments in which the work is taken.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

In order to receive the Master's degree the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar, not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

For the Doctor's degree, three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided that such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School, three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate

School, that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German. In order to receive the degree of Doctor of Philosophy, the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. (For particulars see page 17). The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

COURSES OF INSTRUCTION

For detailed description of the courses given in the Graduate School, see the Announcements of the College of Liberal Arts and the College for Teachers.

ANATOMY

6. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the head of the department.

Professor Knower, Assistant Professor Malone.

ASTRONOMY

For Courses Open to Graduates See Page 63.

BIOLOGY

To pursue advanced courses in biology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES

To enter upon work for the degree of Master of Arts in zoology students must have completed Courses 1a, 2a, 3b, 4b, 10a, 15a, 17b, 18b, or their equivalents. (See Biology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology. The requirements for a higher degree, when biology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 29).

Primarily for Graduates

30. Current Problems in Zoology.
Assistant Professor Wieman.

31. Research. Hours to be arranged.
Professor Benedict and Assistant Professor Wieman.

For Other Courses Open to Graduates See Page 67.

CHEMISTRY

SPECIAL REQUIREMENTS FOR HIGHER DEGREES

The Degree of Doctor of Philosophy

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12b, 13b. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the advanced courses required in connection with the choice made. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12b and 13b (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree.

The Department of Chemistry requires that at least sixteen of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail of a subject suggested by the instructor under whose direction the student has been placed.

Primarily for Graduates

30. Research.
Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch,
Assistant Professor ———, Assistant Professor ———.

35b. Some Special Problems and Theories of Organic Chemistry. Professor Jones.

40. Journal Club Meetings. Papers by instructors and advanced students.

For Other Courses Open to Graduates See Page 72.

ECONOMICS

(The Sinton Professorship)

For Courses Open to Graduates See Page 76.

EDUCATION

Education 3. Principles and Problems of Secondary Education.—S., 9:30-11:30. Professor West.

Open to graduates and teachers who contemplate appointment to high school positions. For the conditions under which graduate students may enter the course see Program II, page 111.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. W., 4:00-6:00. Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Professor Hall.

Education 17. Educational Classics.—M., 4:00-6:00. Professor Burris.

Education 1, 2 and 6.—These courses (for description of which see Announcement of the College for Teachers), when pursued by graduate students, may be counted for credit towards a graduate degree, provided such students do satisfactory pieces of independent work and embody the results of same in acceptable written theses. The number of credits allowed, respectively, for these courses, will be six, six, and two.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

For Graduates Only

20. Seminary.—Studies in Literary Theory. T., 3:30-5:30. Professor Chandler.

For Courses Open to Graduates See Page 80.

GEOLOGY AND GEOGRAPHY

For Courses Open to Graduates See Page 82.

GERMAN

Primarily for Graduates

12. Interpretation of the Second Part of Faust and Study of the Legend.—*First semester*, T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—S., 11:30-12:30.
Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

7. Middle High German.—M., 4:00-6:00.
Assistant Professor Lotspeich.

8. Old High German.—M., 4:00-6:00.
Assistant Professor Lotspeich.

Omitted in 1912-13.

13. Gothic.—W., 4:00-6:00. Assistant Professor Lotspeich.

26. Old Norse.—W., 4:00-6:00.
Assistant Professor Lotspeich.

Omitted in 1912-13.

9. German Seminary.—*Second semester*, T., 4:00-6:00.
Professor Poll.

Omitted in 1912-13.

For Other Courses Open to Graduates See Page 84.

GREEK

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.
Professor Harry.

7. Greek Seminary.—Aristophanes (1912-13); Homer (1913-14). M., 3:00-5:00. Professor Harry.

Open to graduates and to those who have completed the undergraduate courses in Greek.

For Other Courses Open to Graduates See Page 86.

HISTORY

For Courses Open to Graduates See Page 88.

LATIN

Primarily for Graduates

(Hours in all cases to be arranged)

9. Latin and Romance Palæography.—Professor Burnam.

Prerequisite: Four years of undergraduate work and ability to read French and German.

10. Latin Seminary.—Caesar. Professor Burnam.

12. Graduate Study.—Credit according to the work elected and completed under the direction of the teaching staff of the Department. Professor Burnam and Assistant Professor Semple.

MATHEMATICS

Primarily for Graduates

33. Advanced Algebra.—Lectures. T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

30. Theory of Numbers, Part I.—T., 4:00:6:00; S., 10:30-12:30. Professor Hancock.

Omitted in 1912-13.

31. Theory of Numbers, Part II.—T., 4:00-6:00; S., 10:30-12.30. Professor Hancock.

Omitted in 1912-13.

32. Theory of Numbers, Part III.—T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

Omitted in 1912-13.

24. Elliptic Functions. Part I.—Analysis. Professor Hancock.

Omitted in 1912-13.

25. Application of Elliptic Functions. Part II.—W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1912-13.

20. Theory of Maxima and Minima Involving Several Variables.—W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.

Omitted in 1912-13.

18a. Theory of Minimal Surfaces.—*First semester,* T., Th., S., 8:30-9:30. Professor Hancock.

Omitted in 1912-13.

For Other Courses Open to Graduates See Page 91.

MATHEMATICS (APPLIED)

Primarily for Graduates

26a. The History and Teaching of Mathematics.—*First semester.* Hours to be arranged. Professor Slocum.

11b. Fourier's Series and Spherical Harmonics.—*Second semester,* Th., 4:00-6:00; S., 9:30-10:30. Professor Slocum.

Omitted in 1912-13.

10a. Theory of Errors and Method of Least Squares.—*First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

Omitted in 1912-13.

16a. Theoretical Mechanics.—*First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

16b. The Mathematical Theory of Elasticity.—*Second semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

For Graduates Only

30. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid or gaseous bodies. Professor Slocum.

For Other Courses in Mathematics See Page 91.

PATHOLOGY AND BACTERIOLOGY

9. Research.—Open to any qualified person after consultation with the head of the department.

Professor Woolley, Associate Professor Wherry.

PHILOSOPHY

Primarily for Graduates

9. Types of Philosophy.—This course is one of a cycle with Courses 10 and 11, and will be given in 1912-13. Th., 12:30-2:30. Professor Tawney.

10. Philosophical Method. Professor Tawney.

Omitted in 1912-13.

11. Kantian and Post-Kantian Idealism. Professor Tawney.

Omitted in 1912-13.

For Other Courses Open to Graduates See Page 95.

PHYSICS

For Graduates Only

7. Lectures on Theoretical Physics. Professor More.

25a. Theoretical Mechanics.—See under Applied Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Professor More and Associate Professor Allen.

For Other Courses Open to Graduates See Page 98.

PHYSIOLOGY

(The Joseph Eichberg Professorship)

7. Research.—Open to any qualified person after consultation with the head of the department. Professor Fischer.

POLITICAL AND SOCIAL SCIENCE

Primarily for Graduates

3. History of Political Ideas.—M., 4:00-6.00.

——— ———.

19. Political Science Seminary.—A detailed study of the administrative organization of France and Germany. M., 4:00-6:00.

——— ———.

For Other Courses in Political and Social Science Open to Graduates See Page 100, 101.

PSYCHOLOGY

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Professor Breese.

6a. Educational Psychology.—*First Semester.* Hours to be arranged. Professor Breese.

For Other Courses Open to Graduates See Page 103.

ROMANCE LANGUAGES

Primarily for Graduates

12. Old French.—W., 1:00-3:00. Professor Ogden.
Prerequisite: Course 4.

14. Early Spanish.—Phonology and inflections.
Assistant Professor Bassett.
Prerequisite: Course 8 or 22.

19b. Provençal Language and Literature.—T., 2:40-4:00.
Professor Ogden.

17. Seminary.—French Prose in the Nineteenth Century. S., 8:30-10:30. Professor Ogden.

25a. Phonetics. Assistant Professor Bassett.

For Other Courses Open to Graduates See Page 105.

McMICKEN COLLEGE OF LIBERAL ARTS

FACULTY AND INSTRUCTORS

Charles William Dabney, Ph. D., LL. D., President of the University.
Jermain Gildersleeve Porter, Ph. D., Director of the Observatory and Professor of Astronomy.
Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Civics.
Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
John Miller Burnam, Ph. D., ... Professor of Latin.
Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Joseph Edward Harry, Ph. D., ... Professor of Greek.
Merrick Whitcomb, Ph. D., ... Professor of History.
Louis Trenchard More, Ph. D., Professor of Physics and Dean of the McMicken College of Liberal Arts.
Burtis Burr Breese, Ph. D., ... Professor of Psychology.
Stephen Elmer Slocum, Ph. D., Professor of Applied Mathematics.
Nevin Melancthon Fenneman, Ph. D., Professor of Geology and Geography.
Lauder William Jones, Ph. D., ... Professor of Chemistry.
Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Frank Wadleigh Chandler, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
Phillip Ogden, Ph. D., . . . Professor of Romance Languages.
Harris Miller Benedict, A. M., ... Professor of Botany.
——— ———, ... Professor of Zoology.
——— ———, ... Professor of Political and Social Science.
George Morey Miller, Ph. D., . . Associate Professor of English.
Harry Shipley Fry, Ph. D., . Associate Professor of Chemistry.
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Claude M. Lotspeich, Ph. D., . Assistant Professor of German.
Emilie Watts McVea, A. M., Assistant Professor of English and Dean of Women.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and English.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.

Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, A. M., Assistant Professor of Economics and Social Science.
——— ———, . . . Assistant Professor of Physical Chemistry.
——— ———, ... Assistant Professor of Metallurgy.
Alfred Brodbeck, ... Director of Physical Education.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Arthur James Kinsella, A. M., ... Instructor in Greek.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
James Francis Dilworth, A. M., . Instructor in English History.
Bishop Platt Evens, Mechanician and Instructor in Laboratory Arts.
Cora May Box, A. M., ... Instructor in Zoology.
Fred Wilbert Upson, Ph. D., ... Instructor in Chemistry.
Helen Thompson Woolley, Ph. D., . . Instructor in Philosophy.
Marguerite Gray, A. B., . . . Instructor in Physical Education.
Vernon Lantis, A. M., ... Instructor in Botany.
Leroy James Cook, A. M., ... Instructor in French.
Eleanor Katherine Nippert, A. B., . . . Instructor in German.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
——— ———, ... Instructor in Mathematics.
——— ———, ... Instructor in Physics.

Other Appointments

Charles Hecker, Ch. E., ... Assistant in Chemistry.
Schachne Isaacs, A. B., ... Assistant in Psychology.
Raphael Isaacs, A. M., Assistant in Zoology, Histology, and Embryology.
Reginald C. McGrane, ... Assistant in History.
——— ———, ... Assistant in Geology and Geography.
——— ———, Fellow in History of the Society of the Colonial Dames in the State of Ohio.
——— ———, ... D. A. R. Fellow in American History.
Sebastian J. Mauchly, A. B., ... Hanna Fellow in Physics.
——— ———, ... Teaching Fellow in Botany.
Emma Andriessen, A. B., ... Graduate Assistant in German.
Emma Lisette Doerr, A. B., . . Graduate Assistant in Chemistry.
E. W. Osgerby, M. S., ... Graduate Assistant in Chemistry.

REQUIREMENTS FOR ADMISSION TO THE McMICKEN COLLEGE OF LIBERAL ARTS

Candidates for admission as undergraduates must be at least sixteen years of age. They must give evidence of having completed satisfactorily an amount of preparatory study represented by sixteen units, a unit being understood to mean one of the subjects in the following table pursued for one full year of five recitation periods each week. Of these sixteen units every candidate for admission to the McMicken College of Liberal Arts must present the following:

English—Three units, in which there can be no "condition."

Mathematics—One unit in Algebra and one unit in Plane Geometry.

History—One unit.

Language—Three units, from the five languages: Latin, Greek, French, German, Spanish; two units must be in the same language. Candidates who intend to pursue the study of Latin in the University must present four units in Latin.

In addition to these fixed requirements the candidate must offer a number of units selected from the list of subjects below, sufficient, with the units specified above, to amount to a total of sixteen. The number of units that may be offered in any subject is shown in the following table:

	Number of Units Accepted for Admission			
	Minimum			Maximum
English	3	required	or	4
Latin	1	Three units required, two of which must be in one language	or 2 or 3 or	4
Greek	1		or 2	3
French	1		or 2 or 3 or	4
German	1		or 2 or 3 or	4
Spanish	1		or	2
General History	1	One unit required		1
Ancient	½		or	1
Mediaeval and Modern	1			1
English	½		or	1
American	½		or	1
American and Civics	1			1
Algebra	1	required	or	1½ or 2
Geometry, Plane	1	required	or	1
Geometry, Solid	½		or	½
Trigonometry	½		or	1
Civics	½			½
Physics	1			1
Chemistry	1			1
*Zoology	1			1
*Botany	1			1
Physical Geography	½		or	1
Astronomy	½			½
Geology	½			½
Drawing	1			2
Manual Training	1			2
Domestic Science	1			4

* One-half unit will be allowed in Zoology and one-half unit in Botany when these two subjects are presented together as one unit in the same year.

ENTRANCE CONDITIONS

Students who are deficient in not more than two units of the sixteen required for admission may be admitted conditionally to the College of Liberal Arts. All such entrance conditions must be removed before the student is allowed to register at the beginning of his second year of residence at the University.

ENTRANCE EXAMINATIONS

Examinations for admission will be held on May 20, 21, 22, 23, 24, 25, 1912. They will also be held on September 16, 17, 18, 19, 20 and 21.

Students who desire to take these examinations must obtain permission beforehand from the Director of School Affiliation. All applications for permission to take the entrance examinations should be made at least two days before the first day of the examination period. Some of the examinations may be taken in the spring and the remainder in the fall if so desired. Students who apply for entrance examinations at times other than the days specified will be charged a fee of five dollars.

A candidate for admission to the University, coming from one of the accredited schools, who is not a graduate of such school, will not be admitted to the entrance examinations within one year after leaving such preparatory school, unless recommended for examination by the principal of the school from which he comes.

Students intending to take these entrance examinations should consult the statement of the entrance requirements, as printed on a preceding page, and arrange to take their examinations

(a) in the fixed requirements, and

(b) in enough additional subjects to make a total of sixteen units.

The work covered by each unit or group of units in the various subjects may be found on the following pages. Specimen entrance examination questions will be furnished free of charge on application to the Director of School Affiliation.

SCHEDULE OF ENTRANCE EXAMINATIONS

May 20, 1912; September 16, 1912:

8:30–11:00	English	3 units
11:00–12:00	English	1 unit additional
1:00– 3:00	Physics	1 unit
3:00– 4:00	Solid Geometry	½ unit
4:00– 5:00	Physical Geography	½ or 1 unit

May 21, 1912; September 17, 1912:

8:30–10:30	Latin	1 or 2 units
10:30–12:00	Latin	1 or 2 units additional
1:00– 3:00	Chemistry	1 unit
3:00– 4:00	Astronomy	½ unit
4:00– 5:00	Civics	½ unit

May 22, 1912; September 18, 1912:

8:30–10:30	French	1 or 2 units
10:30–12:00	French	1 or 2 units additional
1:00– 2:30	Plane Geometry	1 unit
2:30– 4:00	Algebra	1 unit
4:00– 5:00	Advanced Algebra	½ or 1 unit additional

May 23, 1912; September 19, 1912:

8:30– 9:30	Ancient History	½ or 1 unit
9:30–10:30	American History	½ or 1 unit
10:30–12:00	General or Mediaeval and Modern History	1 unit
1:00– 2:00	English History	½ or 1 unit
2:00– 3:00	American History and Civics	1 unit
3:00– 5:00	Spanish	2 units

May 24, 1912; September 20, 1912:

8:30–10:30	German	1 or 2 units
10:30–12:00	German	1 or 2 units additional
1:00– 3:00	Zoology	½ or 1 unit
3:00– 5:00	Botany	½ or 1 unit

May 25, 1912; September 21, 1912:

8:30–10:30	Greek	1 or 2 units
10:30–11:30	Greek	1 unit additional
11:30–12:00	Drawing	1 unit
1:00– 2:00	Trigonometry	½ or 1 unit
2:00– 4:00	Geology	½ unit
4:00– 5:00	Manual Training	4 units
4:00– 5:00	Domestic Science	4 units

DEFINITION OF UNITS

Detailed statements showing the exact amount of work required for each unit or group of units in the various subjects are here presented:

ENGLISH COMPOSITION AND LITERATURE

I. Three Units.—The preparation should include the following subjects:

Composition.—There should be practice in writing at regular and frequent intervals throughout all the years of the preparatory course. Special attention should be given to the proper structure of sentences and paragraphs, and the method of planning or outlining an essay.

Grammar.—It is expected that the applicant will be familiar with the essentials of English grammar, and will be able to explain the construction of sentences that occur in the classics he has read.

English Classics.—The following books are recommended for reading and study, 1911-12:

For Reading.—Group I (two to be selected): Shakespeare's *As You Like it, Henry the Fifth, Julius Caesar, The Merchant of Venice, Twelfth Night.* Group II (one to be selected): Bacon's *Essays,* Bunyan's *Pilgrim's Progress,* Part I; The Sir Roger de Coverley Papers in the *Spectator;* Franklin's *Autobiography.* Group III (one to be selected): Chaucer's *Prologue;* Spenser's *Faerie Queene* (selections); Pope's *Rape of the Lock;* Goldsmith's *Deserted Village;* Palgrave's *Golden Treasury* (first series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns. Group IV (two to be selected): Goldsmith's *Vicar of Wakefield;* Scott's *Ivanhoe* and *Quentin Durward;* Hawthorne's *House of the Seven Gables;* Thackeray's *Henry Esmond;* Mrs. Gaskell's *Cranford;* Dickens' *Tale of Two Cities;* George Eliot's *Silas Marner;* Blackmore's *Lorna Doone.* Group V (two to be selected): Irving's *Sketch Book;* Lamb's *Essays of Elia;* De Quincy's *Joan of Arc* and *The English Mail Coach;* Carlyle's *Heroes and Hero Worship;* Emerson's *Essays* (selected); Ruskin's *Sesame and Lilies.* Group VI (two to be selected): Coleridge's *Ancient Mariner;* Scott's *Lady of the Lake;* Byron's *Mazeppa* and *The Prisoner of Chillon;* Palgrave's *Golden Treasury* (first series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Macaulay's *Lays of Ancient Rome;* Poe's Poems; Lowell's *Vision of Sir Launfal;* Arnold's *Sohrab and Rustum;* Longfellow's *Courtship of Miles Standish;* Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, The Boy and the Angel, One Word More, Hervé Riel,* and *Pheidippides.*

For Intensive Study.—Shakespeare's *Macbeth;* Milton's *Lycidas, Comus, L'Allegro,* and *Il Penseroso;* Burke's *Speech on Conciliation*

with America, or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* Macaulay's *Life of Johnson,* or Carlyle's *Essay on Burns.*

All the books should be read with care and appreciation, but particular attention should be given, with regard to form, structure, and style, to those intended for intensive study. In addition, the student should have some definite knowledge of the lives of the authors read and of the history of their times.

II. Four Units.—For four units in English composition and literature the preparation should extend throughout the four years of the high school course. Besides the subjects mentioned above, the applicant should have studied the outlines of English literary history. His study should be based upon one of the recent manuals of English literature, the study of the text being accompanied by as much reading as possible of representative authors.

LATIN

I. First Unit.—The student should have digested some Beginner's Book like that of Coy, or Collar and Daniel.

II. Second Unit.—Caesar's *Gallic War,* Books I-IV, or an equivalent amount selected from the remaining portions of that work. It is expected that in the first year's preparation the student has mastered the declensions, comparisons, and verbal inflections, knows the leading rules of syntax, and possesses some vocabulary. Along with Caesar there should be some exercise in Latin Composition, a wider and deeper acquaintance with grammatical principles of the language, and a good vocabulary. Sallust's *Catiline* or an equivalent amount of the *Jugurtha* may be substituted for two books of Caesar. It is furthermore suggested that the teacher, if possible, vary the Caesar lessons by selections from Books V-VII.

III. Third Unit.—Cicero, *In Catilinam,* I-IV, and *Pro Archia,* with more practice in composition. It is also preferred that the student should study an additional oration or short treatise, e. g., *de Amicitia,* or selections from the *Letters.* He should also begin the practice of writing continuous prose.

IV. Fourth Unit.—Vergil's *Aeneid,* I-VI, with scanning and prosody. An equivalent amount of verse from *Aeneid,* VII-XII, or Ovid will be accepted in place of *Aeneid,* III and V. If circumstances permit, it is very advantageous to let Ovid precede Vergil. It is preferable that the composition done during this year be based on Cicero.

GREEK

I. First Unit.—White's *Beginner's Book* or an equivalent. Grammar and composition work.

II. Second Unit.—Xenophon's *Anabasis,* Books I and II. Grammar and composition work.

III. Third Unit.—In addition to the work outlined in paragraphs I and II, the following:

Xenophon, *Anabasis,* Books III and IV.
Homer, *Iliad,* Books I-III.
Composition.
Grammar: Babbitt, Goodell, Goodwin, or Hadley-Allen

FRENCH

I. One Unit.—

(a) The translation at sight of very simple French prose.

(b) The translation into French of easy sentences to test the candidate's familiarity with elementary grammar.

(c) One full year of five periods a week is necessary to meet the requirements in one unit. The first one hundred and fifty pages in Fraser and Squair's *French Grammar* may be taken as a standard of the amount of grammar which should be covered during that period.

II. Two Units.—

(a) The translation at sight of ordinary prose. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the regular verbs; the auxiliaries être, avoir; the more frequent irregular verbs.

(c) The translation into French of sentences to test the candidate's familiarity with elementary grammar.

Two full years of five periods a week are necessary to meet the requirements in two units. Fraser and Squair's *French Grammar,* complete, may be taken as a standard of the amount of grammar which should be covered during that period. Not less than three hundred duodecimo pages should be read from the works of at least three different authors. Suitable texts for these two units are: *Le Siège de Berlin* and *La Dernière Classe,* Daudet; *La Mère Sauvage,* Maupassant; *Le Tour de la France,* Bruno; *Le Petit Chose,* Daudet; *Sans Famille,* Malot; *La Tache du Petit Pierre,* Mairet; *La Poudre aux Yeux,* Labiche et Martin; *Le Voyage de M. Perrichon,* Labiche et Martin; *La Cigale chez les Fourmis,* Legouvé et Labiche.

III. Three Units.—A continuation for one year of work just outlined. The candidate should be able to read at sight ordinary French prose or poetry, to translate into French easy English prose, to answer questions involving a more thorough knowledge of the essentials of French syntax, especially the ordinary uses of tenses and modes. It is expected that the candidate for three units will have worked through a grammar and will have read five or six hundred pages of French during three years of five periods a week. Suitable texts for these three units are: The plays of Labiche, Scribe, etc.; *Gil Blas*, Lesage; *Le Tour de la France*, Bruno; *La Belle Nivernaise*, Daudet; *Les Fourberies de Scapin*, *Le Médicin Malgré Lui*, Molière; Voltaire's historical writings; *Le Cid*, Corneille; Coppée's poems, etc.

IV. Four Units.—

(a) The translation at sight of standard French. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the irregular verbs and the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

(c) The translation into French of a connected passage of English prose.

(d) The writing of a theme in French on a given topic.

Four full years in a good preparatory school are necessary to meet the requirements for four units. Not less than six hundred pages should be read from the works of at least five different authors. Suitable texts besides those given above are *Colomba*, Mérimée; *La Mare au Diable*, Sand; *Pêcheur d' Islande*, Loti; *La Canne de Jonc*, Vigny; *Horace*, Corneille; *L' Avare* and *Le Bourgeois Gentilhomme*, Molière; *Athalie*, Racine; *Le Gendre de M. Poirier*, Sandeau; *Récits des Temps Mérovingiens*, Thierry; *L' Expédition de Bonaparte en Egypte*, Thiers.

The student should have constant practice in giving paraphrases and abstracts. He should be trained to write French from dictation in order to enable him to understand lectures delivered in that language.

GERMAN

I. One Unit.—

(a) The translation at sight of very simple German prose.

(b) The translation into German of easy sentences, to test the candidate's familiarity with elementary grammar.

The candidate ought to have read not less than one hundred pages of easy German, such as is found in Howell's or Harris's *German Reader*.

II. Two Units.—

(a) The translation at sight of simple German prose.

(b) The translation into German of easy connected prose, to test the candidate's familiarity with elementary grammar. The requirement in elementary grammar includes the conjugation of the weak and strong verbs; the declination of articles, adjectives, pronouns, and such nouns as are readily classified; the prepositions; the simpler uses of the modal auxiliaries; the elements of syntax, especially the rules governing the order of words.

The candidate ought to have read not less than two hundred pages of easy German, such as is found in Hewett's or Harris's *German Reader.*

In general, to obtain two units in German, two years' work in a good preparatory school is required.

III. Three Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate ought to have read not less than four hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Wilhelm Tell;* Lessing's *Minna von Barnhelm;* Goethe's *Hermann und Dorothea;* Wildenbruch's *Das edle Blut;* Fontane's *Vor dem Sturm;* Moser's *Kopnickerstrasse.*

Generally speaking, three years' work in a good preparatory school will be necessary in order to meet the requirements for three units.

IV. Four Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar. The candidate will be expected to show a thorough knowledge of accidence, the principal uses of prepositions and conjunctions, and the essentials of syntax, especially the uses of the modal auxiliaries and of the subjunctive and infinitive modes.

The candidate ought to have read not less than six hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Jungfrau von Orleans;* Goethe's *Iphigenie;* Freytag's *Die Journalisten, Soll und Haben, Bilder aus der deutschen Vergangenheit;* Riehl's *Culturgeschichtliche Novellen.*

In general, to obtain four units in German, four years' work in a good preparatory school is required.

SPANISH

I. One Unit.—

(a) The translation at sight of simple Spanish prose.

(b) The essentials of grammar, including the conjugations of the regular and the most frequently used irregular verbs. The translation into Spanish of short sentences, intended to test the candidate's knowledge of the essential points in grammar. Conversation and dictation.

In general, one year's work in a preparatory school, or its equivalent, is necessary to meet the requirements for one unit. The candidate will be expected to have worked through a short Spanish grammar, or the principal parts of a more complete one, and to have read at least one hundred pages of simple Spanish. Suitable texts for one unit are: *Spanish Reader,* Bronsby; *Victoria y Otros Cuentos,* Asensi; *Gil Blas,* Padre Isla; *El Pájaro Verde,* Valera; *O Locura o Santidád,* Echegaray; *Zaraguëta,* Carrión y Vital Aza; *El Clavo,* Alarcón, etc.

II. Two Units.—

In general, two years' work in a preparatory school, or its equivalent, will be needed to meet the requirements for two units. In addition to the work outlined in Paragraph I, the candidate will be expected to have worked through an elementary composition book and to have read from two to three hundred pages of modern Spanish. Suitable texts for the second unit are: *El Capitán Veneno,* Alarcón; *El Sí de las Niñas,* Moratín; *Doña Perfecta,* Galdós; *Guzmán el Bueno,* Gil y Zárate; *Cuentos Alegres,* Taboada; *Legends, Tales, and Poems,* Bécquer; *El Haz de Leña,* Nuñez de Arce; *José,* Valdés, etc.

MATHEMATICS

I. Algebra. One Unit. Definitions.—Integral numbers. Rational numbers. Irrational numbers. The six fundamental operations of algebra. Algebraic expressions. Rational Algebraic expressions. Application of the four fundamental operations to Rational Algebraic expressions. The use of parentheses. Especial emphasis given to working within the parentheses. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, simple and complex. Simple equations, both numerical and literal, containing one or more unknown quantities. Systems of equations. Problems depending on linear equations. Involution and evolution of monomials and polynomials. Radicals, including rationalization.

Exponents, including the fractional and negative. Imaginary quantities. Elementary treatment of quadratic equations. The solution of simple problems in quadratic equations.*

II. ALGEBRA. ONE AND ONE-HALF UNITS.—In addition to Paragraph I, the following: The completion of quadratic equations, both numerical and literal. A standard form for the solutions of these equations. The discriminant condition for equal roots, real and imaginary roots. Relations among the roots and the co-efficients of the equation. The nature of the roots when the different co-efficients approach zero. Simultaneous quadratic equations. Systems of equations, simple and quadratic. Property of quadratic surds and solution of equations containing radicals. Problems leading to quadratic equations. Ratio and proportion. The binomial theorem for positive integral exponents.

III. ALGEBRA. TWO UNITS.—In addition to the work outlined in Paragraphs I and II, the following: Convergence of infinite series. Binomial theorem with fractional negative exponents. Exponential and logarithmic series. Formation of logarithms to base e, to base 10. Properties and application of logarithms. The progressions. Continued fractions.

IV. PLANE GEOMETRY. ONE UNIT.—The work required in Plane Geometry is practically the equivalent of the first five books in Wells', Sanders', or Wentworth's Geometry. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of lines and plane surfaces.

V. SOLID GEOMETRY. ONE-HALF UNIT.—The usual theorems and constructions of good text-books. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of surfaces and solids.

VI. PLANE TRIGONOMETRY. ONE-HALF UNIT.—Definitions and relations of the six trigonometric functions as ratios, not as lines.

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* It is assumed that the pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Familiarity with the metric system is pre-supposed. Some of these problems should be chosen from mensuration, from physics and from commercial life. The use of graphic methods and illustrations, particularly in connection with the solution of equations, is also expected. On the other hand, the student must be guarded against the tendency to become mechanical in his algebraic work. Algebra is not to be used as a T-square. Above all, the student should be thoroughly grounded in the fundamental principles, operations and definitions. It is recommended that Wells's Academic Algebra, Wentworth's Algebra, or an equivalent be used.

Circular measurement of angles. Proofs of principal formulas, in particular those for the sine, cosine and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expression for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

VII. Trigonometry. One unit.—In addition to Paragraph VI, the following: Solutions of triangles, right-angled and oblique, requiring a knowledge of logarithms. Application to heights and distances. Demoivre's Theorem. Properties of spherical triangles. Formulas connecting the sides and angles of spherical triangles. Napier's Analogies. Gauss' Theorem. Solution of spherical triangles.

PHYSICS

One unit.—The candidate must be well prepared in the elementary theory of the subject and must present a note-book showing the quantitative work done by him in the laboratory.

The instruction in the class-room should include qualitative lecture-room experiments, the solution of numerous problems, and the study of some one standard text-book, such as Hall and Bergen.

Every candidate for admission on examination is required to present a laboratory note-book, signed by the teacher, containing the results of quantitative experiments performed by him in the laboratory. At least thirty quantitative experiments must have been performed, of which ten must be in mechanics, and which must also include three of the subjects, light, heat, electricity, and sound. The thirty experiments are to be selected from a list of sixty or more, which may be had by addressing the Secretary of the University, or from the list adopted by the National Educational Association, which may be found in *The Teaching of Chemistry and Physics*, Smith and Hall, Chapter X.

Laboratory note-books will be examined for neatness, language, accuracy, and proficiency in physics. They should be called for within one month after presentation.

CHEMISTRY

One unit.—The student's preparation should consist of an elementary course in chemistry (one year)* of the character taught in the better class of high schools. It should include:

(a) Individual laboratory work, to the extent of at least one-third of the time;

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* The course should cover from thirty-five to forty weeks, with four to five periods per week. Two hours of laboratory work count as one period of recitation.

(b) Instruction by lecture table demonstration, to be used when expensive apparatus or superior skill in manipulation is indispensable;

(c) The study of at least one standard text-book, to the end that the pupil may gain a connected view of the subject.

Either in the class-room or by experimental treatment in the laboratory, the course should take up for consideration the important modes of occurrence, the principal methods of preparation, the essential physical and chemical properties, and the recognition of the elementary substances and their chief compounds, commonly considered in the standard text-books. More detailed study should be given to those of frequent occurrence, or of especial scientific importance.

The candidate should be able to state the significance of such commonly used terms as homogeneous body, solution, element, compound. By the use of definite examples, he should be able to show what kinds of facts have led to the formulation of such essential laws as the laws of definite and of multiple proportions, the law of combining weights, the laws of the expansion of gases, and the law of volumes of reacting gases.

He should be qualified to give a statement of the nature of the processes by the aid of which chemists determine equivalent weights, choose molecular weights, and select atomic weights; furthermore, to explain the significance of chemical symbols, and the manner of arriving at chemical formulæ (not graphic) after the necessary quantitative data are obtained in the laboratory.

Such terms as valence, acid, base, salt, neutralization, hydrolysis, oxidation, reduction, decomposition, dissociation, electrolysis, ionization, should have a meaning to the student, and he should be prepared to define them correctly, at least by well-chosen illustrations, if they cannot be defined precisely by words.

At the time of and as part of the examination in chemistry, every student must present a note-book, containing a description of at least forty experiments. The note-book must include drawings of essential pieces of apparatus used, and an index of the experiments. For the list of experiments recommended, address the Secretary of the University. The laboratory note-book should be called for within one month after presentation.

Text-books recommended: McPherson and Henderson, Hessler and Smith, Newell, Bradbury, Remsen (Briefer Course), Torrey, and Story and Lindsay. Other texts than the one prescribed should be available to the student for reference. Ostwald's *Conversations on Chemistry* will be found stimulating and suggestive for collateral reading.

ZOOLOGY

One unit.—The candidate will be required to present his original note-book of practical laboratory study, together with the dates and the endorsement of his teacher, certifying that the book is a true record of the pupil's own work. The note-book should contain carefully labeled outline drawings of the chief structures studied in at least fifteen different animals, together with notes on the same. The note-book will be graded as one-third of the examination. The student will be expected to know the classification of animals into phyla and classes, and he must be able to state the chief characteristics and to compare the general life activities of examples of each of the principal classes. He must know the general plan of internal structure of one vertebrate (frog or fish) in general comparison with the human body; an arthropod (crustacean or insect); an annelid (earth-worm or Nereis); a coelenterate (hydroid, hydra or sea-anemone); a protozoan (a ciliate and amoeba when possible). A mollusk (clam or mussel), an echinoderm or a second vertebrate may be substituted for any of the above types. A knowledge of the very general features of cell division, of the cellular nature of germ-cells, and the essentials of embryological development will be expected, as well as some understanding of the main facts involved in the struggle for existence, adaptation to environment and variation of individuals.

Such books as Benedict's *Animal Adaptations,* Colton's *Descriptive and Practical Zoology,* Harvey's *Introduction to the Study of Zoology,* or Kingsley's *Comparative Zoology* cover this ground adequately. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY

One unit.—A laboratory note-book containing drawings of the parts of two kinds of flowering plants, of a fern, moss, liverwort, toadstool, lichen, and mould, must be presented with the certificate of his teacher that it is the student's own work. The note-book will count for one-third of the work.

A knowledge of the names and distinguishing characteristics of the different phyla and the classes will be required, and the kind of alternation of generations found in the three highest phyla must be known. A general knowledge of the principal plant societies and the relation between their structures and environments, as well as an understanding of the adaptations by which the flowering plant does its necessary work are important requirements.

Bergen, Bessey, Atkinson, Caldwell, Coulter, and Leavitt are representatives of the type of elementary texts accorded recognition.

BOTANY AND ZOOLOGY

One unit.—A unit will be accepted only when Botany and Zoology have each been studied for half a year in one continuous course which extends throughout the year. Such a course will be reckoned as a one-unit course in Biology. A half year of one, independent of the other, will not be accepted. It is strongly recommended that the student devote an entire year to Botany or to Zoology for one unit, instead of combining Botany and Zoology for a single unit.

At least half of the work must have been laboratory work guided by definite directions. A laboratory note-book containing drawings and observations upon at least ten kinds of animals (both vertebrate and invertebrate) and ten kinds of plants (both flowering and non-flowering) must be presented with the certificate of the teacher that it is the student's own work. The student will be required to answer in writing general questions upon familiar animals, such as the frog, fish, earth-worm, paramoecium, cray fish, etc., and upon common plants, such as the fern, moss, mushroom, and simple flowering plants. In both Botany and Zoology a knowledge of the names and distinguishing characteristics of the different phyla and their classes will be required. The note-book will count for one-third of the work.

PHYSICAL GEOGRAPHY

One-half unit.—The scope of the work required for one-half unit in Physical Geography is represented by the standard modern text-books, some of which are named below. This includes the earth as a whole, atmosphere, ocean and land, with special emphasis on the work of water on the land in making topographic features. Entrance examinations may include simple interpretations of topographic maps, weather maps, and such charts as are given in text-books, the pointing out of features of scientific importance in such pictures as are used in text-books, and simple demonstrations with globes.

Dryer, *Lessons in Physical Geography;* Tarr, *New Physical Geography;* Gilbert and Brigham, *Introduction to Physical Geography;* Davis, *Physical Geography;* Ward, *Practical Exercises in Elementary Meteorology;* and *Physiography of the United States* (10 National Geographic Monographs), are recommended as suitable texts.

One unit.—For a sufficiently thorough and extended knowledge of the subject, and at the option of the examiner, a credit of one unit may be given. Examinations for one unit's credit assumes a knowledge of the larger text-books, a greater familiarity with laboratory exercises, and such a knowledge of the United States as will enable the candidate readily to cite illustrations of all topographic forms.

ASTRONOMY

One-half unit.—The student should be familiar with:

(*a*) Such fundamental notions and definitions as are necessary to locate celestial bodies.

(*b*) The names and positions of the most conspicuous stars and constellations, and be able to trace the positions of the ecliptic across the sky at certain times during the year.

(*c*) The most important facts concerning the form, dimensions, mass, density, rotation and orbital motion of the earth, including seasons, tides, eclipses, and other dependent phenomena; also methods for determining the mass of the earth.

(*d*) The essentials concerning the sun, moon, and planets, including methods for determining their respective distances, motions, etc.

(*e*) The various hypotheses of the stellar universe and cosmogony.

Every student should visit a well-equipped observatory at least twice, once during the day to examine the apparatus, and once at night to view the heavens.

GEOLOGY

One-half unit.—The scope here intended is that of the text-books appropriate to high schools and preparatory schools, and includes the elements of dynamic, structural, and historical geology. The applicant must be able to distinguish specimens of the more general types of igneous and sedimentary rocks; also to classify in a general way the more common fossils and state the most general facts concerning their place in geological history. Examinations will also involve the interpretation of geologic maps. Laboratory exercises may be given, requiring the interpretations of such diagrams and views as are used for text-book illustrations.

A knowledge of Physical Geography is required of all candidates in Geology. Norton's *Elements of Geology* and Brigham's *Text of Geology* are suitable texts.

HISTORY

I. General History, or Medieval and Modern History. One Unit.—General History: Myers, Barnes, or G. B. Adams (complete); Medieval and Modern History: Munro and Whitcomb, Myers, Thatcher and Schwill, Harding's *Essentials*, or Robinson's *History of Western Europe* (complete).

II. English History. One unit.—English History: Montgomery, Walker, Andrews, Cheyney, Larned or Wrong (complete). (Where half time is given to this subject a half unit may be offered.)

III. Ancient History. One unit.—Ancient History: Myers, Seignobos, West, or Wolfson (complete). (Where half time is given to the subject a half unit may be offered.)

IV. American History. One unit.—American History: Adams and Trent, Channing, Larned, McLaughlin, Montgomery (student's), McMaster, or Hart's *Essentials* (complete).

V. American History and Civics. One unit.—See list in IV for American History. For Civics, James and Sanford: *Government in State and Nation,* or an equivalent text.

CIVICS

One-half unit.—James and Sanford: *Government in State and Nation,* or an equivalent text. (See V under History above.)

DRAWING

One unit.—One unit for entrance will be allowed for Freehand Drawing or Mechanical Drawing, or both. The student must have done the equivalent of at least two years' work of not less than four periods a week of forty-five minutes each.

The work in Freehand Drawing should include outline drawing from models, principles of light and shade, application of conventional forms, ornaments, design, etc.

The course in Mechanical Drawing should cover lettering, simple geometric problems, projections, solution of problems of helix, cycloid, parabola, etc.

The candidate for admission on examination must present at the time of, and as a part of, his examination a full set of drawings, with the teacher's certificate that they are the candidate's work.

MANUAL TRAINING

Drawing. Two units.—Two units of credit will be allowed the drawing which is given as a part of the Manual Training course, provided it covers four years of work and is done in accordance with the regulations governing laboratory work; that is, twice the time must be given to the subject each week as is given to a regular recitation period.

Shop work. Two units.—Two units of credit will be allowed for shop work of the four-year course in Manual Training. The course must include carpentry, wood turning, pattern making, foundry work, forging, and machine work, and the proper courses in drawing must accompany such work.

The amount of time spent in shop to receive one credit must be at least double the time spent in regular recitation work. The candidate for admission on examination must present at the time of, and as part of his examination, a certified list of courses completed by

him, the drawings for the same, and such statements of his work as will give an adequate idea of the efficiency of the course.

DOMESTIC SCIENCE

FOUR UNITS.—Work in Domestic Science will be accepted for admission to the extent of four units, provided the work covers four years and is done in accordance with the regulations governing laboratory work; that is, twice the time should be given to this work each week as is given to the academic studies which it displaces. The course should include the drawing and art work which usually accompany a first-class course in this subject. The first two years should include a study of textiles, drafting of patterns and the making of dresses, and the designing and construction of hats. The last two years of work should consist of the study of cooking, chemistry of foods, home construction and sanitation, dietetics, food adulteration, bacteriology, laundering, decorating, and home economics.

ADMISSION ON CERTIFICATE FROM ACCREDITED SCHOOLS

Work of passing grade will be accepted from graduates of the University's accredited schools in lieu of the entrance examinations upon the presentation of the proper certificate, signed by the principal of the school, certifying to the work of the candidate. All certificates presented for admission must specify the work actually done and the grade received in each course. Blank forms will be furnished upon application to the Director of School Affiliation.

These certificates, properly made out, should be sent to the Director of School Affiliation, University of Cincinnati, Cincinnati, Ohio, as soon as possible after graduation, and at least five days before the first day of registration. Upon receipt of the certificate, the Director of School Affiliation will pass upon the application, and if it is satisfactory, will send a card of admission, which should be presented to the Registrar at the opening of the session. If the certificate is not satisfactory, the candidate will be informed, so that he may prepare himself for the entrance examinations.

*LIST OF ACCREDITED SCHOOLS

The following preparatory schools and high schools are on the accredited list of the University of Cincinnati. This list is subject to change from year to year, and each school is visited each year by a representative of the University:

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* Superintendents or principals who may desire to have their schools accredited by the University, should address the Director of School Affiliation.

CITY	NAME OF SCHOOL	PRINCIPAL
Bellevue, Ky.	High School	*W. P. King
Carthage, O.	High School	C. A. Wilson
Cincinnati, O.	Oakhurst Collegiate School	Miss H. F. Kendrick
Cincinnati, O.	The Bartholomew Clifton School	Miss E. A. Ely Mary F. Smith
Cincinnati, O.	Franklin School	J. E. White G. S. Sykes
Cincinnati, O.	The College Preparatory School for Girls	Mary Doherty
Cincinnati, O.	The H. Thane Miller School	Emma L. Parry Mrs. H. Miller
Cincinnati, O.	Hughes High School	E. W. Coy
Cincinnati, O.	Walnut Hills High School	Wm. T. Harris
Cincinnati, O.	Woodward High School	E. D. Lyon
Cincinnati, O.	University School	Wm. E. Stilwell
College Hill, O.	Ohio Military Institute	§A. M. Henshaw
Covington, Ky.	High School	S. P. C. Roberts H. S. Cox *H. O. Sluss
Danville, Ky.	Caldwell College	‡John C. Acheson
Dayton, O.	Steele High School	C. L. Loos, Jr. *E. N. Brown
Delhi, O.	Mt. St. Joseph on the Ohio Academy	Sister Eveline
Glendale, O.	High School	*J. C. Chapin
Glendale, O.	Glendale College	‡Jane R. DeVore
Hamilton, O.	High School	C. H. Lake *Darrel Joyce
Hartwell, O.	High School	Adelaide Driffel *Arthur Powell
Jeffersonville, Ind.	High School	F. E. Andrew *C. M. Marble
Lawrenceburg, Ind.	High School	Lydia A. Sembach *J. W. Riddle
Lebanon, O.	High School	Joseph Lyle *C. H. Young
Lockland, O.	High School	*S. F. Dial
Ludlow, Ky.	High School	*W. D. Reynolds
Madisonville, O.	High School	*C. M. Merry
Maysville, Ky.	High School	J. E. Caldwell *J. W. Bradner
Middletown, O.	High School	C. E. Burke *N. D. O. Wilson
Milford, O.	High School	J. H. Hightower *H. P. Timmons
Newport, Ky.	High School	*C. G. Hammond
Norwood, O.	High School	Wm. A. Evans W. W. McIntire *W. S. Cadman
Oldenburg, Ind.	Academy of the Immaculate Conception	Sister M. Clarissa
Pleasant Ridge, O.	High School	*T. L. Simmermon
Sayler Park, O.	High School	*J. O. Falkenburg
Wyoming, O.	High School	*C. S. Fay

* Superintendent § Commandant ‡ President

LIST OF RECOGNIZED SCHOOLS

The work of the following schools is recognized by the University. Graduates of these schools will be given entrance credit without examination for such work as they have completed in a satisfactory manner:

CITY	NAME OF SCHOOL	PRINCIPAL
Cincinnati, O.....	East Night High School.....	Albert Schwartz
Cincinnati, O.....	West Night High School.....	E. W. Wilkinson
Dayton, Ky.....	High School.....	Miss W. Winn McDowell L. N. Taylor, Supt.
Highlands, Ky.....	High School.....	F. A. Cosgrove
Loveland, O.....	High School.....	John Morris, Supt.
Terrace Park, O.....	High School.....	E. H. Foster
Williamsburg, O.....	High School.....	R. C. Franz

ACCREDITED SCHOOLS OF THE NORTH CENTRAL ASSOCIATION

Graduates of the secondary schools approved by the North Central Association of Colleges and Secondary Schools will be admitted to the University of Cincinnati in accordance with the provision for "Admission on certificate from accredited schools." A complete list of schools approved by this Association was printed in the University of Cincinnati Catalogue for 1910-11.

REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

The degree of Bachelor of Arts is the only degree conferred upon graduates of the College of Liberal Arts.

The "unit" for reckoning credit in the University is a subject pursued for one hour per week for one semester. One hundred and twenty-four credits are required for the degree of Bachelor of Arts, of which the required subjects as outlined below must be a part. It is required, moreover, that every candidate for this degree must attain a grade not lower than *C* in at least sixty of the one hundred and twenty-four credits.

All students who are candidates for the Bachelor of Arts degree must fulfill the following requirements:

1. English 1, three hours per week, to be taken in the freshman year.

2. One of the *sciences, Biology, Chemistry, Geology, or Physics, with laboratory work, five hours per week for one year. Those students who elect Mathematics in their freshman year are permitted to postpone their work in Science until the sophomore year.

3. A three-hour course for one year in either Psychology or Philosophy, not to be taken in the freshman year.

4. A reading knowledge of two languages out of five (Greek, Latin, French, German, or Spanish). It is advised that this knowledge be acquired before the junior year.

In case four units in any language are offered for admission, the requirement in this language shall be regarded as fulfilled; in case two units in any language are offered, the student shall be required to take an additional three-hour University course for one year in the same language during the freshman or sophomore year.

5. A three-hour course for one year in History, Political and Social Science, or Economics.

6. Five hours per week in the Department of Physical Education.—It is expected that these hours will be distributed as follows: three hours per week for all members of the freshman class, and two hours per week for all members of the sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

On or before the first week of the senior year students who have not been certified by the heads of the departments of Greek, Latin, French, German, or Spanish, as having fulfilled the requirements with respect to language, must pass an examination to determine that they have fulfilled these requirements.

At or before the beginning of the junior year each student is required to select work in two departments, in each of which he shall have obtained at least sixteen credits before graduation.

The last year of work required for the degree of Bachelor of Arts must be done in residence at the University of Cincinnati.

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* Science may be elected in the sophomore year by freshmen who are taking both Greek and Latin.

ELECTION OF STUDIES

The following courses are prescribed for all freshman students in the College of Liberal Arts:

English 1	3 credit hours
Language	3 credit hours
*Science or Mathematics	5 credit hours
Physical Education	1 credit hour
Total	12 credit hours

The selection of the remainder of the work for the freshman year is left to each student in conjunction with the Advisory Committee.

Subject to the restrictions noted under "Requirements for the Bachelor of Arts Degree," the department statements, and "Election of Studies," all studies are open to election.

In all laboratory courses two and one-half hours in the laboratory are considered as equivalent to one recitation hour and the preparation therefor. Without permission from the Dean, no student shall elect courses amounting to more than eighteen hours per week of University work, exclusive of the work in Physical Education.

Students who have satisfied the requirements for admission, but take less than twelve hours per week, are called "irregular students," and a tuition fee is charged in every instance. (See "Fees.") No student is permitted to elect courses in more than five departments in any one semester.

SPECIAL ARRANGEMENTS

Credit for Work Done in the College of Law.—A student who has received credit for the work of the first two years in the College of Liberal Arts may, in the third year, elect from four to six hours per semester of the lectures of the first year of the law course, as a substitute for studies in the College of Liberal Arts, and in the following year he may, in the same way, take the remainder of the thirteen hours of the first year's course in the College of Law. Or, if he so desires, he may elect, in his senior year, the entire thirteen hours of the first year law course (equivalent to twenty-six credit hours in the College of Liberal Arts), provided he has fulfilled all the requirements for obtaining his B. A. degree. Thus a student may obtain both the academic and legal degrees in six years. In either of the above cases, the student, after the year 1911-12, will be classified as an irregular student in the College of Liberal Arts, and will be

* Freshmen who take both Greek and Latin will be permitted to take their science in the sophomore year.

required to pay tuition at the regular rate of three dollars per credit hour per semester.

Seven-year Combined Collegiate and Medical Course.—A revised plan for a combined collegiate and medical course has been adopted, whereby a student may take both the degrees of Bachelor of Arts and Doctor of Medicine in seven instead of eight years. Students who desire to elect this course must first obtain permission to do so from the Dean of the College of Liberal Arts.

Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary.—Arrangements have been made with the Hebrew Union College and with Lane Theological Seminary, whereby students of these institutions who are pursuing a course in the University of Cincinnati may be allowed to count work in Hebrew taken in these institutions for the degree of Bachelor of Arts, to the amount of two hours a week throughout the freshman and sophomore years, and three hours a week throughout the junior and senior years, for the Hebrew Union College, and three hours per week for three years in Lane Theological Seminary, provided such work is regularly entered upon the election schedules of the University.

Credit for Work Done in the Art Academy of Cincinnati.—By an arrangement with the Art Academy of Cincinnati, students from the University may elect from the courses stated in the catalogue in drawing, modeling and carving, not more than six hours' work in any one semester, and receive credit therefor on the books of the University, provided these courses have been duly entered on the election blank and the proper certificate from the Director of the School is presented on their satisfactory completion. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

Credit for Work Done in the College for Teachers.—A student in the College of Liberal Arts may elect Education in the College for Teachers in lieu of the work in one of the two departments in each of which he is required to obtain at least sixteen credits before graduation.

Certain courses in Education, also, to the number of twenty-four credits, may be elected by undergraduates during the senior year and be counted toward fulfilling requirements for the A. B. degree. For the courses which may be counted, those which are prerequisite to them, and other items of information, see page 76.

UNIVERSITY OF ILL
PRESIDENT'S OFFICE

COURSES OF INSTRUCTION

ASTRONOMY

JERMAIN GILDERSLEEVE PORTER, PH. D., Director of the Observatory and Professor of Astronomy.

For Undergraduates

1b. Descriptive Astronomy.—Lectures and class work. No mathematical training is required beyond a geometrical conception of the sphere and its circles. The object of the course is to give a comprehensive view of astronomy in its historic and practical relations, as well as a general résumé of our knowledge concerning the heavenly bodies. Reference books: *Popular Astronomy,* Newcomb; *Manual of Astronomy,* Young; *The Stars in Song and Legend,* Porter. M., F., 10:30—11:30, *second semester.* Professor Porter.

2a. General Astronomy.—Text-book: Young's *Manual of Astronomy.* W., 2:00-3:00, *first semester.* Professor Porter.

For Course 2a Trigonometry, Analytical Geometry, and Calculus will be required.

3b. General Astronomy.—Text-book: Young's *Manual of Astronomy.* W., 2:00-3:00, *second semester.* Professor Porter.

Course 3b is open only to those who have taken Course 2a.

For Undergraduates and Graduates

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester;* hours to be arranged.

Professor Porter.

5b. Computation of a parabolic orbit from three observations, and of an elliptic orbit with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester;* hours to be arranged.

Professor Porter.

Courses 4a and 5b are given at the Observatory.

BIBLICAL LITERATURE

CHARLES WILLIAM DABNEY, PH. D., LL. D., President of the University.

For Undergraduates and Graduates

8a. The Social Doctrine of Jesus.—A study of his teachings with regard to the nature of man, his individuality and responsibility; the family, rights of children, divorce; society, the method

of its improvement; the state and our relations to it; wealth, the rich and the poor, "the social question;" crime, criminals, and their treatment; non-resistance, peace and war, etc.

Subjects and references are given out and reports made, followed by lectures and discussions. *First semester,* two hours, Th., S., 9:30-10:30. President Dabney.

8b. The Political and Social Institutions of the Ancient Hebrews in Relation to Modern Civilization.—A similar study. *Second semester,* two hours. President Dabney.

BIOLOGY

Harris Miller Benedict, A. M., ... Professor of Botany.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Cora May Box, A. M., ... Instructor in Zoology.
Vernon Lantis, A. M., ... Instructor in Botany.
Raphael Isaacs, A. M., Assistant in Zoology, Histology, and Embryology.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students who expect to do advanced work in biology are advised to take general inorganic chemistry during their first year and organic chemistry during their second year, together with the courses in biology.

Students who desire to be recommended as teachers of biology in secondary schools must complete as a minimum, courses 1a to 8b inclusive and courses 15 and 35. It is very desirable that they also do at least one year of graduate work.

REQUIREMENTS FOR DEGREES

When biology is chosen as one major for the degree of Bachelor of Arts, the sixteen credits regarded as a minimum must be in zoology or in botany; that is, only one elementary course will be counted in these sixteen units.

To enter upon work for the degree of Master of Arts in zoology, students must have completed courses 1a, 2a, 3b, 4b, 15, 17b, 18b, or their equivalents. Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who elect their majors in other departments. When zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in Zoology.

For Undergraduates

1a. Animal Biology.—Lectures dealing with topics of a general biological nature, such as animal activities and adaptations, protoplasm, the cell, sex, development, etc. The course is intended to provide a thorough foundation for further work in zoology. This course must be accompanied by Course 2a. *First semester,* M., W., F., 9:30-10:30.
Assistant Professor Wieman.

2a. Animal Biology, Laboratory.—This course consists of the practical laboratory and field work which must accompany Course 1a. Certain animals, selected as types to illustrate general principles, are dissected and compared. Careful notes and drawings of all dissections are required. *First semester,* Sec. I, M., W., 1:00-4:00; Sec. II, T., Th., 1:00-4:00; Sec. III, T., Th., 9:30-12:30.
Assistant Professor Wieman, Miss Box, and Mr. Isaacs.

3b. General Zoology.—Lectures dealing in a comparative way with the various groups of animals, including life-histories, distribution, habits, adult anatomy, and classification. This course must be accompanied by Course 4b. *Second semester,* M., W., F., 9:30-10:30.
Assistant Professor Wieman.

Course 3b is open to students who have passed in Course 1a.

4b. General Zoology, Laboratory.—This course consists of the practical work which must accompany Course 3b. Careful dissections, drawings, and comparisons are required. *Second semester,* Sec. I, M., W., 1:00-4:00; Sec. II, T., Th., 1:00-4:00; Sec. III, T., Th., 8:30-11:30.
Assistant Professor Wieman, Miss Box, and Mr. Isaacs.

5a. Plant Biology.—Lectures dealing with the physiology, ecology, and evolution of plants. The course is designed to give a general understanding of the factors which are operating in plant life, and to provide the proper foundation for the study of systematic botany. This course must be taken in conjunction with course 6a. *First semester,* M., W., F., 8:30-9:30. Professor Benedict.

6a. Experimental Plant Biology.—This course consists of laboratory and field investigations of the physiology and ecology of selected plants and is designed to give the student a thorough working knowledge of the vital activities of plants and of the best methods for their demonstration. Each student is required to keep a careful record in a note-book of the results of all physiological experiments and ecological observations, illustrating them with exact drawings. This course must be taken in connection with Course 5a. *First semester,* T., Th., 1:00-4:00. Professor Benedict and Mr. Lantis.

7b. General Botany.—Lectures on the structure, reproduction, and adaptation to environment of the plants of the various phyla of the plant kingdom, including short series of special lectures on "Bacteria and Disease" and "History and Value of Cultivated Plants."

This course is designed to give a general knowledge of the different forms of plant life. It must be taken in connection with Course 8b. *Second semester,* M., W., F., 8:30-9:30. Professor Benedict.

8b. General Botany, Laboratory.—Thorough laboratory study of the structure of selected plants as examples of the different phyla of the plant kingdom, as well as carefully organized field trips for the purpose of learning to identify the commoner plants in their own habitats. This course must be taken in connection with Course 7b. *Second semester,* T., Th., 1:00-4:00.

Professor Benedict and Mr. Lantis.

9. Sanitary Biology.—Lectures on the biological principles involved in sanitary engineering, designed to enable the engineer to solve local problems in sanitation and to appreciate the significance of specialists' reports. This course is also intended to give to both academic and engineering students an understanding of the comparatively recent biological discoveries which are revolutionizing the methods of preserving the public health. M., 2:00-3:00, throughout the year.

Professor Benedict.

Course 9 is open to all students.

11. Life, Organic Evolution, and Heredity.—A lecture course primarily for engineers and for upper classmen in the academic college, who have not elected the regular work in Biology, but who desire some insight into the fundamental problems of this science; the origin of life; the evolution of the plants and animals of human environment and of man himself; the laws which govern heredity. M., W., 11:30-12:30, alternate weeks throughout the year.

Assistant Professor Wieman.

Course 11 is open to all junior and senior students except those who have taken courses 1a and 3b or 5a and 7b.

12b. Field Ornithology.—A field study of the identification, classification, songs, and habits of our native birds. One laboratory period per week during the second semester. Hours to be arranged.

Professor Benedict.

35. Systematic Botany.—A course designed to give a working knowledge of the flora of this vicinity, comprising field trips followed by laboratory work in classification and in the preservation of plants, discussions on plant relationships and the preparation of "keys." The first semester will be devoted to the study of local Protophytes, Phycophytes, Carpophytes, Bryophytes and Pteridophytes, while during the second semester the Spermatophytes will be worked on. T., Th., 9:30-12:30. Professor Benedict and Mr. Lantis.

Course 35 is open to students who have taken courses 5 and 7, and under certain conditions to all seniors. It is required of all who desire to be recommended as teachers of Biology or Nature-Study in secondary schools.

15. Invertebrate Zoology.—A two-hour course (two laboratory periods) dealing with selected forms of Invertebrates. It is intended for students who desire a wider acquaintance with such forms than that afforded by the course in general zoology. M., W., 1:00-4:00, throughout the year. Miss Box.

Course 15 is open to students who have passed in Courses 1, 2, 3, and 4.

For Undergraduates and Graduates

19a. Embryology of Vertebrates.—The work consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 20. T., Th., 1:00-2:00. Assistant Professor Chambers.

Course 19 is open to students who have passed in Courses 1, 2, 3, and 4.

20a. Embryology of Vertebrates, Laboratory.—Laboratory work to accompany Course 19. The work is based largely on the chick and pig. T., Th., 2:00-5:00.

Assistant Professor Chambers and Mr. Isaacs.

Course 20 is open to students who have passed in Courses 1, 2, 3, and 4.

17b. Comparative Anatomy of Vertebrates.—Lectures on the anatomy, classification, habits, and distribution of vertebrates. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester,* T., Th., 1:00-2:00.

Assistant Professor Chambers.

Course 17b is open to students who have passed in Courses 19a and 20a.

10a. Microscopical Technique.—The course includes the preparation and use of standard fixing and staining agents, and drill in the manipulative processes incident to general microscopy and cytology. *First semester,* M., W., 1:00-4:00.

Assistant Professor Wieman.

Course 10a is open to students who have passed in Courses 19a and 20a.

10b. Cytology.—A laboratory course intended to serve as an introduction to cytology and the general field of cellular biology. *Second semester,* M., W., 1:00-4:00.

Assistant Professor Wieman.

Course 10b is open to students who have passed in Course 10a.

18b. Comparative Anatomy of Vertebrates, Laboratory.—The work consists in the careful dissection and study of selected forms. *Second semester,* T., Th., 2:00-5:00.

Assistant Professor Wieman.

21. Histology and Organology.—This course is planned to emphasize the view that the subject is merely a further microscopic analysis of the gross structure of the body. The course is concerned with the anatomy of functional units and their combinations. The structure of tissues and organs is studied by approved methods and the best technical procedures are taught. Embryology is constantly referred to. The material is human wherever possible. A laboratory course with supplemental lectures. M., W., 8:30-11:30.

Assistant Professor Chambers and Mr. Isaacs.

Course 21 is open to students who are taking Courses 19a and 20a, or have already passed in them.

23. Field Work.—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three-hour course. Hours to be arranged.

Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany.

24a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester,* T., 10:30-11:30.

Professor Benedict.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

25a. Plant Histology, Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester,* T., Th., 8:30-11:30.

Professor Benedict.

26b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester,* T., 10:30-11:30. Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

27b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This

course must be taken in connection with Course 26b. *Second semester,* T., Th., 8:30-11:30. Professor Benedict.

40. Current Problems in Botany.—Lectures, assigned readings, and discussions upon present problems in plant physiology and cytology. A reading knowledge of French or German is required. Two credit hours. Professor Benedict.

Course 40 is open to students who have passed in Courses 5a, 6a, 7b, 8b, 24a, 25a, 26b, 27b, and 35.

Primarily for Graduates

30. Current Problems in Zoology.—Assigned readings and discussions to accompany courses of research. Heredity is the topic for 1912-13. A reading knowledge of French or German is required. Two credit hours. Assistant Professor Wieman.

31. Research.—Hours to be arranged.

Professor Benedict and Assistant Professor Wieman

CHEMISTRY

LAUDER WILLIAM JONES, PH. D., ... Professor of Chemistry.
HARRY SHIPLEY FRY, PH. D., . Associate Professor of Chemistry.
HENRY MAX GOETTSCH, PH. D., Assistant Professor of Industrial Chemistry.
EDWARD B. REEMELIN, A. B., M. D., Assistant Professor of Physiological Chemistry.
——— ———, . . . Assistant Professor of Physical Chemistry.
——— ———, ... Assistant Professor of Metallurgy.
FRED WILBERT UPSON, PH. D., ... Instructor in Chemistry.

ASSISTANTS: Mr. Hecker, Mr. Osgerby, Miss Doerr, and Mr. Werner.

For Undergraduates

1a. General Inorganic Chemistry.—The Non-metals. It is the object of this course to give a definite idea of the fundamental laws of general chemistry, and, in a connected way, to furnish a survey of the important facts concerning the chemistry of the non-metals and their compounds. The subject-matter discussed in the combined lectures, recitations, and quizzes is illustrated amply by experiments, charts, and specimens. Course 2a forms an integral part of, and must accompany Course 1a. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

2a. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week during the first semester. Each student performs a series of experiments complementary to the subject-matter of Course 1a.

Sec I, T., Th., 1:00-4:00.
Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

3b. General Inorganic Chemistry.—The Metals. This course is a continuation of Course 1a and considers chiefly the properties of the metals and their compounds. Three hours per week during the second semester. Students who have completed Courses 1a and 2a are eligible for this course. It must be accompanied by Course 4b. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

4b. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week during the second semester. A series of experiments complementary to the subject-matter of Course 3b.

Sec. I, T., Th., 1:00-4:00.

Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

5a. Qualitative Analysis.—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis is laid upon the application of the laws of chemical equilibrium, and the theories of solution and of electrolytic dissociation to the practical problems of the analyst. Three exercises a week during the first semester. M., W., F., 8:30-9:30. Dr. Upson.

Prerequisite: Courses 3b and 4b.

6. Qualitative Analysis, Laboratory.—This course must accompany Course 5a. During the first few weeks of the semester the student performs the most important tests commonly used in the processes of analytical chemistry. The later work of the course will furnish abundant training in the qualitative examination of salts, minerals, alloys, etc. Two exercises a week during the first semester; two laboratory periods and one quiz period during the second semester. M., W., 1:00-4:00, or T., Th., 1:00-4:00. Dr. Upson.

7b. Quantitative Analysis.—An introductory laboratory course in gravimetric and volumetric analysis. Occasional conferences are held, at which analytical methods and calculations are discussed, and at which reports are submitted covering assigned reading. Three exercises a week during the second semester. M., W., F., 1:00-4:00.

Assistant Professor ———.

Prerequisite: Courses 5a and 6 (first semester).

8a. Elementary Organic Chemistry.—Three exercises a week during the first semester. The course comprises quizzes and lectures which are experimental to a certain extent, and deals with the chief classes of organic compounds of both the aliphatic and aromatic series. This course is arranged to meet the needs of those who intend to specialize in chemistry, in medicine, or in biology. It serves as a general introduction for those who intend to go deeper into the study of organic chemistry. M., W., F., 11:30-12:30.

Professor Jones.

Prerequisite: Courses 3b and 4b.

9a. Organic Reactions and Preparations.—A course of laboratory practice, arranged to accompany the lectures of Course 8a. A number of simple organic substances are made, with the view to furnishing, by the fewest illustrations possible, the largest variety of typical reactions and manipulations. M., W., 1:00-4:00.

Professor Jones, assisted by Dr. Reemelin and Dr. Upson.

Prerequisite: Courses 3b and 4b.

14b. Metallurgy.—Five credit hours per week during the second semester. The course embraces the study of fuels, refractories, ferrous and non-ferrous metallurgy, and practice in metallurgical calculations. Especial emphasis is laid upon foundry and steel works processes. Excursions will be made to metallurgical establishments in Cincinnati and vicinity. M., T., W., Th., F., 10:30-11:30.

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Prerequisite: Courses 5a, 6, and Physics 1.

15a. Assaying.—One afternoon a week during the first semester. The course consists in laboratory practice in the fire assay of ores and base metals for gold, silver, and lead. M., 1:00-4:00.

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Prerequisite: Course 7b.

16a. Technical Inorganic Chemistry.—Three periods a week during the first semester. Lectures and recitations upon important inorganic chemical industries. For information concerning the details of this course, consult the Announcement of the College of Engineering. M., W., F., 9:30-10:30. Assistant Professor Goettsch.

Prerequisite: Courses 5a and 6.

Omitted in 1912-13.

17. Technical Analysis.—The course consists of analyses of typical industrial products, making use of gravimetric, volumetric, gasometric, electrolytic, and colorimetric processes. The laboratory is well equipped with instruments of precision, such as polariscopes, refractometers, colormeters, specific gravity balances, and other apparatus for rapid determinations by physical means. The aim is not so much at analyzing a large variety of products, as to study typical methods of analysis. The determinations to be made may be varied to suit individual needs. Some of the topics covered in the past have been analyses of fuel, cement, ores, iron and steel, water, gas, fertilizers, soaps, and food. T., Th., F., 1:00-4:00.

Assistant Professor Goettsch, assisted by Dr. Upson.

Prerequisite: Course 7b.

18b. Technical Organic Chemistry.—Three periods a week during the second semester. A continuation of Course 16a. Lectures and recitations upon selected organic chemical industries. M., W., F., 8:30-9:30. Assistant Professor Goettsch.

Prerequisite: Courses 8a, 9a, and 16a.

19b. Metallurgical Engineering, Laboratory.—Three afternoons a week during the second semester. The course consists in experiments on the heat treatment of metals, practice in metallograpny and pyrometry. Collateral reading is required. T., W., Th., 1:00-4:00.
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Prerequisite: Courses 7b, 14b, and 17.

29a. Practical Photography.—One lecture and one laboratory period a week during the first semester. The course embraces a study of the exposure and development of photographic plates; the treatment of defective negatives; the preparation and use of various printing papers; copying, enlarging, and lantern-slide making. W., 8:30-9:30; F., 1:00-4:00. Assistant Professor Goettsch.

Prerequisites: 1a, 2a, 3b, and 4b.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. In this course some of the special topics and recent theories of inorganic chemistry are considered. The topics include: Colloids, reactions in non-aqueous solvents; inactive gases; radioactive elements and emanations; the electron; valence, structure, and co-ordination theories. T., Th., 8:30-9:30.
Associate Professor Fry.

Prerequisite: Courses 5a, 6, and 7b.

11a. Inorganic Preparations.—Three laboratory exercises a week during the first semester. Preparation of inorganic compounds and experiments supplementary to the subject matter of Course 10a. M., W., F., 1:00-4:00. Associate Professor Fry.

Prerequisite: Course 7b.

12a. Physical Chemistry.—Lectures and recitations. Three exercises a week, throughout the first semester. An introductory course which considers the general properties of gases, liquids, solids and solutions, as well as the principles determining reaction velocity and the equilibria in homogeneous and heterogeneous systems. M., W., F., 9:30-10:30.

Prerequisite: Chemistry 5a, 6a, and 7b, Physics 26a and 27b, Mathematics 5. Assistant Professor ———.

13a. Physical Chemistry, Laboratory.—Two exercises a week, throughout the first semester. This course is designed to illustrate the principles developed in Course 12a, and to provide a working knowledge of the common methods used in physical-chemical measurements. This course must accompany Course 12a. Th., F., 1:00-4:00.
Assistant Professor ———.

32b. Electrochemistry.—Lectures and recitations. Three exercises a week throughout the second semester. A general consideration

of the electrical properties of matter with special reference to the theory of aqueous solutions. M., W., F., 9:30-10:30.

Assistant Professor ———.

Prerequisite: 12a.

33b. Electrochemistry, Laboratory.—Two exercises a week throughout the second semester. This course will illustrate the principles and methods of electrochemical measurements: Determination of conductivity with its application, transference numbers, electromotive force, dielectric constant, etc. Th., F., 1:00-4:00. This course accompanies Course 32b. Assistant Professor ———.

34a. Thermodynamics Applied to Chemistry.—Two exercises a week throughout the first semester. The course will be devoted to an elementary consideration of the principles of thermodynamics and their application to physical-chemical problems. The work will be illustrated by the solution of numerous numerical examples. Hours to be arranged. Assistant Professor ———.

Prerequisite: Courses 12a and 32b.

20. Advanced Organic Chemistry.—Lectures and conferences, embracing a systematic study of the principles and practice of organic chemistry, and treating of the modes of formation, properties, reactions, and constitutional formulae of typical members of the most important classes of organic compounds. M., W., F., 9:30-10:30.

Professor Jones.

Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. This course will require considerable reading in the journals of chemistry and in various hand-books and works of reference. Hours to be arranged.

Professor Jones.

Prerequisite: As in Course 20b.

22b. Bio-Chemistry.—Among other subjects, the course will take up for discussion the nature of carbohydrates, fats, and protein substances; the facts and theories relating to the processes of digestion and metabolism; the chemical composition of the body tissues, secretions, and excretions, including the methods employed in their analysis. *Second semester,* M., W., F., 11:30-12:30.

Assistant Professor Reemelin and Dr. Upson.

Prerequisite: Courses 8a and 9a.

22b. Bio-Chemistry, Laboratory.—Laboratory exercises arranged to accompany the lectures, and to acquaint the student with the distinctive reactions of carbohydrates, fats, and protein substances. The student will be expected to learn the application of these tests to the qualitative detection of, and the quantitative estimation of, these substances in body tissues, secretions, and excretions. Digestion,

the analysis of gastric and fecal matter and of urine will be considered from the chemical point of view. *Second semester,* M., W., 1:00-4:00. Assistant Professor Reemelin and Dr. Upson.

Prerequisite: Courses 8a and 9a.

24b. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter, and considers the development of the fundamental laws of the science of chemistry. Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. Three exercises per week during the second semester. Hours to be arranged. Associate Professor Fry.

Prerequisite: 5a, 6, 8a and 9a, or 20b and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two periods a week during the second semester; hours to be arranged.

Professor Jones.

Prerequisite: 5a, 6, 8a, and 9a; Physics, 1 year.

Primarily for Graduates

30. Research.—This course requires at least eight periods of laboratory work per week under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d).

Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch,
Assistan Professor ———, Assistant Professor ———.

35b. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration are chosen from the following: Optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpines; tautomerism; the polypeptides, proteins, etc. *Second semester.* Two hours a week, to be arranged. Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research.

All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

FREDERICK CHARLES HICKS, PH. D., Sinton Professor of Economics and Civics.

WILLIAM HAMMOND PARKER, A. M., Assistant Professor of Economics and Social Science.

Students desiring a general knowledge of economics are recommended to take Course 1 or Courses 1 and 2. Courses 6 and 7 are intended especially for those who are studying economics with a view to preparing for business careers. Courses 11, 12, and 13 are required of students taking a major in economics.

For Undergraduates

1. Economics.—This course is intended to give the student a general view of the subject. It includes a study of (1) the elements of economics: wealth, value, price, competition, monopolization, production, and distribution; (2) the evolution of industry from local organization and control during the middle ages, through nationalism and the industrial revolution, to modern conditions; and (3) the leading economic problems of today. Lecture, W., 11:30-12:30; Sec. 1 (for men), M., 11:30-12:30; Sec. II (for women), F., 11:30-12:30.

Professor Hicks and Assistant Professor Parker.

2. Economic History.—A study of industrial development since the tenth century, including the economic history of the United States. Subjects considered: the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times. T., Th., 11:30-12:30.

Assistant Professor Parker.

6a. Commercial Geography.—A study of the relations between geography and economics. A general description of the countries of the world; their geography, topography, climate, population, natural resources; distribution of useful animal, vegetable, and mineral products; industries, possibilities of development, etc. *First semester,* T., Th., 10:30-11:30.

Course 6a is open to students who have had Course 1.

Omitted in 1912-13.

7b. Commercial Law.—This course will deal with the prin-

ciples of law underlying ordinary business transactions. The specific subjects treated will be contracts, commercial paper, suretyship, agency, partnership, corporations, real property, personal property, mortgages, slander and libel, trade marks, etc. *Second semester*, T., Th., 10:30-11:30.

Course 7b is open to students who have had Course 1.

Omitted in 1912-13.

For Undergraduates and Graduates

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist principally of a comparison of the views of representative economists. T., 4:00-6:00. Professor Hicks.

Course 11 is open to students who have completed at least two years of university work and to others by special permission.

12. Industrial Evolution.—An analysis of the modern economic system and a study of its development from earlier forms of industry. W., 4:00-6:00. Professor Hicks.

Course 12 must be preceded or accompanied by Course 11.

13. Applied Economics.—The application of economic principles to leading problems, such as socialism, land nationalization, labor, trusts, money, transportation and the tariff. Th., 4:00-6:00. Professor Hicks.

Course 13 must be preceded or accompanied by Course 12.

14. Seminary.—For the detailed study of special problems. Credit according to work done. Professor Hicks.

EDUCATION

William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education.

John William Hall, A. M., Professor of Elementary Education.

Alice Cynthia King, A. M., Assistant Professor of Elementary Education.

——— ———, ... Instructor in Elementary Education.

The following courses may be elected by undergraduates during the senior year, and be counted toward fulfilling requirements for the A. B. degree in the McMicken College of Liberal Arts.

1. History and Principles of Education.—6 credits. M., W., F., 10:30-11:30. Professor Burris.

2. Theory and Practice of Teaching.—8 credits. Three hours class-room work and fifteen hours of practice per semester. Hours for practice to be arranged before registration. M., W., F., 9:30-10:30. Professor Hall.

4. School Economy.—2 credits. F., 11:30-12:30. Assistant Professor King.

14. The Teaching of English.—4 credits. M., W., 8:30-9:30. Assistant Professor King.

16. The Teaching of History.—2 credits. F., 8:30-9:30.

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20. The Teaching of Mathematics.—2 credits. *Second semester,* M., W., 11:30-12:30. Assistant Professor King.

22. The Teaching of Geography.—2 credits. *First semester,* M., W., 11:30-12:30. Assistant Professor King.

Prerequisite Courses:

Psychology 1a and 1b.

Philosophy 5b.

Geology and Geography 1.

History 15. (For those who did not offer a year's work in American history for admission.)

Education Courses 1, 2 and 4, and eight credits for work elected in Courses 14, 16, 20, and 22, making a total of twenty-four credits, entitle the graduate to a Teacher's Diploma, conferred by the College for Teachers, and a place on the preferred list of those eligible to appointment in the Cincinnati schools.

Students may count Education as one of the two departments in each of which they are required to obtain at least sixteen credits for graduation.

Students who take Education with a view of obtaining a Teacher's Diploma should invariably consult with the Dean of the College for Teachers before registration. They will be required, in case of doubt, to give satisfactory evidence of physical qualifications for the work of teaching.

For further information, including statements in detail concerning the requirements of professional programs for those who wish to prepare for various positions in educational work, see announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

Frank Wadleigh Chandler, Ph. D., Professor of English and Ropes Professor of Comparative Literature.

George Morey Miller, Ph. D., Associate Professor of English.

Emilie Watts McVea, A. M., Assistant Professor of English.

Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and of English.

Clyde William Park, A. M., . . Assistant Professor of English.

Bertha K. Young, A. M., . . . Assistant Professor of English.

For Undergraduates

1. English Composition.—This course presents a general survey of the principles of English composition and endeavors to enforce them by practice in writing. A certain amount of reading in English literature is also required.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, T., Th., S., 8:30-9:30.
Sec. III, M., W., F., 10:30-11:30.
Sec. V, M., W., F., 1:00-2:00.
Sec. VI, M., W., F., 1:00-2:00.
Sec. VII, W., 4:00-6:00, and a third hour for conference.
Associate Professor Miller, Assistant Professors McVea, Van Wye, Park, and Young.

Sec. VII is open to teachers, but is omitted in 1912-13.

Course 1 is required for all students in the College of Liberal Arts in the freshman year. It can not be counted towards a major in English.

2. Advanced English Composition.—The first semester is devoted to argumentation, the second semester to description and narration.

Sec. I, T., Th., 8:30-9:30.
Sec. II, T., Th., 10:30-11:30.
Associate Professor Miller, Assistant Professor McVea.

English 2 can not be counted towards a major in English.

3. Types of Literature.—An appreciative rather than an historical study of the principal literary kinds—lyric, narrative verse, drama, prose fiction, and essay—illustrated by readings in representative masterpieces, chiefly English. Lectures, class papers, discussions. T., Th., 9:30-10:30. Professor Chandler.

Course 3 is recommended for Freshmen and Sophomores only.

4. Nineteenth Century Prose.—Studies in the thought and style of the great prose writers, other than novelists, from Coleridge to Carlyle (during the first semester), and from Ruskin to Pater (during the second semester). M., W., F., 10:30-11:30.
Assistant Professor Young.

5. Shakespeare.—A study of the life and times of Shakespeare, his dramatic methods, and the literary history of his plays. Some of the plays are examined in detail, and most of the others are assigned for reading. M., W., F., 9:30-10:30.
Assistant Professor Young.

6. Victorian Poetry.—A study of the poetical works of Tennyson, Browning, Arnold, Rossetti, and Swinburne, involving a dis-

cussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.

Professor Chandler.

Omitted in 1912-13.

11. The English Novel.—This course considers the origin and history of the English novel, and discusses its characteristics as a form of prose literature. M., W., F., 11:30-12:30.

Associate Professor Miller.

16. Wordsworth and his Contemporaries.—A study of the English romantic poets of the early nineteenth century—Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats—involving a discussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.

Professor Chandler.

Course 16 is recommended for Juniors and Seniors.

18. American Literature.—Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, and some of their contemporaries. T., Th., 1:00-2:00. Assistant Professor McVea.

Omitted in 1912-13.

25. Public Speaking and Reading Aloud.—Control of the voice and body, correct enunciation, and practice in the effective expression of the student's own thought and of the thought of others.

Sec. I, T., Th., 10:30-11:30.

Sec. II, T., Th., 11:30-12:30.

Sec. III, S., 9:30-11:30.

Assistant Professor Van Wye.

Sec. III is especially designed to meet the needs of teachers. Some attention is given in this section to the study of the various types of literature.

Course 25 is open only to students who have passed in Course 1, and it can not be counted toward a major in English. Course 25 is recommended for students who expect to take Course 13.

13. Forms of Public Address.—This course is intended to serve as an introduction to debating and as a preparation for effective public speaking. T., 12:45-2:45.

Assistant Professor Van Wye.

Course 13 is open to students who have passed creditably in Course 1 and Course 2 (first semester). It is recommended for seniors who are candidates for the Jones prizes.

26. The Essay.—A consideration of the origin and history of the English essay, involving a study of the rise of periodical literature and some reading of foreign examples of the type. M., W., F., 1:00-2:00. Assistant Professor Park.

Omitted in 1912-13.

For Undergraduates and Graduates

7a. Old English Prose.—An elementary reading course in Old English. *First semester.* T., Th., S., 8:30-9:30.

Assistant Professor Young.

Course 7a is prerequisite to Courses 8b and 9b, and is required of all students who choose English as a major subject. Such students are required, in addition, to take either 8b, 9b, or 10.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester,* T., Th., S., 8:30-9:30.

Assistant Professor Young.

9b. Early Middle English.—A study of the development of the English language and its literature from the Norman Conquest to the Age of Chaucer, with especial emphasis upon the flourishing of romance. *Second semester,* M., W., F., 10:30-11:30.

Assistant Professor Young.

Omitted in 1912-13.

10. Chaucer.—The work and influence of Chaucer: his times, sources, contemporaries, and immediate successors, studied chiefly from the literary point of view. T., Th., 9:30-10:30.

Associate Professor Miller.

12. Literary Composition.—This course considers the various prose literary forms from the point of view of original composition. Only those students are admitted to the course who satisfy the instructor of their ability to write well. Two hours to be arranged.

Assistant Professor McVea.

14. The English Drama before Shakespeare.—This course considers the origins of the English drama and its earlier manifestations in miracle plays, moralities, and interludes, as well as the regular drama to the death of Marlowe. T., Th., 11:30-12:30, with a third hour to be arranged. Associate Professor Miller.

15. The English Drama from the Death of Marlowe to 1642.—A study of Shakespeare's contemporaries and immediate successors in the development of the drama. M., W., F., 11:30-12:30.

Associate Professor Miller.

Omitted in 1912-13.

19a. The English and Scottish Popular Ballads—A study of the characteristics of folk-poetry and of the origin and development of the popular ballad. *First semester,* T., Th., 11:30-12:30.

Associate Professor Miller.

Omitted in 1912-13.

21b. English Non-dramatic Poetry of the Sixteenth and Seventeenth Centuries.—A study of the development of English poetry, exclusive of the drama, from the beginning of the Elizabethan Age to the Queen Anne Period, including some special study of

verse forms and a brief preliminary survey of the poetry from Chaucer to Tottel's *Miscellany*. *Second semester,* M., W., 8:30-9:30. Associate Professor Miller.

Omitted in 1912-13.

22. Foreign Backgrounds of English Literature.—An introduction to the literature of modern Europe, presenting a general survey of some of the more important works and tendencies since the Renaissance, with particular stress upon such as have proved influential in England. T., Th., 2:00-3:00. Professor Chandler.

23. The Literary Movement of the Eighteenth Century.—A detailed study of the characteristics of romanticism and of their manifestation in the literature of England, France, and Germany, prior to the culmination of the movement in the early nineteenth century. W., 4:00-6:00. Professor Chandler.

27. English Drama Since the Restoration.—A study of the development of the drama in England during the eighteenth and nineteenth centuries, with some attention to its foreign relations. M., W., F., 1:00-2:00. Assistant Professor Park.

For Graduates Only

20. Seminary.—Studies in Literary Theory.—An examination of the principal theories of literature considered historically and philosophically. The later portion of the course will be devoted to the investigation of special problems in literary criticism. T., 3:30-5:30. Professor Chandler.

For Teachers

For courses available for teachers see English 1, Sec. VII; English 25, Sec. III; and Comparative Literature 20 and 23.

GEOLOGY AND GEOGRAPHY

Nevin M. Fenneman, Ph. D., Professor of Geology and Geography.
J. Ernest Carman, B. S., . . . Assistant Professor of Geology.
——— ———, ... Assistant in Geology.

For Undergraduates

1. An introductory study of minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean; followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, M., W., 2:00-4:30; T., Th., 9:30-12:00; T., Th., 2:00-4:30.

Professor Fenneman and ———.

2. General Geology.—This course is primarily for engineering students, but Liberal Arts students will also be admitted. An introductory study of minerals and rocks, dynamic geology and topography, followed in the second semester by stratigraphic, structural,

and economic geology. Five hours, to be announced. If a crowded schedule makes it necessary, this course will be merged, during the first semester, with Course 1. Assistant Professor Carman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure; special attention given to the economic deposits of each period. Frequent local (half-day) excursions noting fossils, stratigraphy, physiography, and economic relations. Lectures, T., Th., 8:30-9:30; Laboratory, W., 1:30-4:00. Course 1 is prerequisite.

Assistant Professor Carman.

Geology 9 is accepted as graduate work by agreement with the professor in charge.

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit for work done. Course 1 is prerequisite. Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Three hours. ——— ———.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized.

Assistant Professor Carman.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Professor Fenneman.

Course 7 is prerequisite.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to the value of the work.

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* Course 1 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major unless Course 1 or its equivalent has been taken.

For Teachers

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lecture, S., 8:30-10:30. Field or Laboratory, 10:30-12:50. Professor Fenneman.

16. Advanced Physiography of the United States.—Course 1 (or Course 14) and Course 9 are prerequisite. Lecture, M., 4:00-6:00; W., 4:00-5:00. Professor Fenneman.

Course 9 is also given to teachers who have had Course 14. Lecture, S., 8:30-10:30; Field or Laboratory, 10:30-12:50.

Assistant Professor Carman.

GERMAN

Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Claude M. Lotspeich, Ph., D., . Assistant Professor of German.
Eleanor Nippert, A. B., ... Instructor in German.
Assistant: Emma Andriessen, A. M.

For Undergraduates

1. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German. Sec. I, T., Th., S., 8:30-9:30; Sec. II, M., W., F., 11:30-12:30.

Assistant Professor Lotspeich and Miss Nippert.

2. German Prose and Poetry.—Reading at sight, grammar, composition, and dictation. Sec. I, M., W., F., 9:30-10:30; Sec. II, M., W., F., 10:30-11:30.

Assistant Professor Lotspeich and Miss Nippert.

Course 2 is open to students who have passed in Course 1.

Course 2 does not count towards a major in German.

20. German Scientific Prose.—Subjects in natural science. M., W., F., 8:30-9:30. Assistant Professor Lotspeich.

Course 20 is open to students who have passed in Course 1. Course 20 does not count towards a major in German. If taken after Course 2, Course 20 will count only as a half course.

3. German Composition (Beginners' Course).—German grammar, conversation, and practice in writing German. T., Th., 10:30-11:30. Miss Nippert.

Course 3 is open to students who have passed in Course 1. Courses 2 and 3 may be advantageously taken together.

**4. Introduction to German Literature of the Eighteenth

** Students entering the University who have done advanced work in German may anticipate this course by passing an examination on the work as outlined above, within three weeks after matriculation.

Century.—Lessing's *Emilia Galotti,* Schiller's *Jungfrau von Orleans* and *Maria Stuart,* Goethe's *Iphigenie, Egmont, Tasso* and *Goetz von Berlichingen.* Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted mainly in German.

Sec. I, M., W., F., 10:30-11:30.

Sec. II, M., W., F., 9:30-10:30.

Professor Poll, Miss Nippert, and Assistant.

Course 4 is open to students who have passed in Course 2. Students in this course are urged to take a composition course in addition.

21. German Composition (Intermediate Course).—Practice in composition, conversation and in writing German. T., Th., 9:30-10:30. Miss Nippert.

Courses 4 and 21 may be advantageously taken together.

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1912-13: *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll and Assistant.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00.

Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30.

Professor Poll.

Omitted in 1912-13.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30.

Professor Poll.

Primarily for Graduates

12. Interpretation of the Second Part of Faust and Study of the Legend.—Collateral reading and written reports. *First semester,* T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

11. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. *Second semester,* T., 4:00-6:00.

Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

7. Middle High German—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. M., 4:00-6:00.

Assistant Professor Lotspeich.

8. Old High German.—Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as textbooks. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00.

Assistant Professor Lotspeich.

Omitted in 1912-13.

13. Gothic.—Braune's *Gotische Grammatik;* reading of selections from Ulfilas; lectures on Germanic philology. W., 4:00-6:00.

Assistant Professor Lotspeich.

26. Old Norse.—Kahle's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00.

Assistant Professor Lotspeich.

Omitted in 1912-13.

9. German Seminary.—Willem's *Van den vos Reinaerde. Second semester.* T., 4:00-6:00. Professor Poll.

Omitted in 1912-13.

For Teachers

Courses 10 and 30, outlined above, are intended primarily for teachers.

32. Elementary Course for Teachers.—S., 9:30-10:30.

Assistant Professor Lotspeich.

GREEK

JOSEPH EDWARD HARRY, PH. D., ... Professor of Greek.
ARTHUR JAMES KINSELLA, A. M., ... Instructor in Greek.

For Undergraduates

1. Oratory—Epic Poetry—Philosophy.—Lysias, six orations; Herodotus, one book; *Iliad,* Books XIX-XXII.

The Lyric Poets.—Selections. Plato: *Protagoras; Lysis; Laches; Charmides.* Collateral reading: two orations of Lysias; two books of the *Iliad;* Plato's *Apology* and *Crito.* M., W., F., 9:30-10:30, throughout the year. Professor Harry.

A collateral course is offered by Mr. Kinsella for those students who are unable to attend at this hour.

2. Greek Prose Composition.—M., 10:30-11:30, throughout the year. Mr. Kinsella.

Course 2 should be taken in connection with Course 1.

3. The Drama.—Euripides, *Hippolytus;* Sophocles, *Oedipus Tyrannus;* Aeschylus, *Prometheus;* Aristophanes, *Nubes.* Collateral reading—Euripides: *Alcestis, Ion.* M., W., F., 10:30-11:30, throughout the year. Professor Harry.

Course 3 is open to students who have completed Course 1.

4. The Odyssey.—Two hours weekly; to be arranged. Mr. Kinsella.

8. The Life and the Literature of the Ancient Greeks.—Greek Life, *first semester.* Homer, *second semester.* Th., 10:30-11:30. Professor Harry.

Students who are not acquainted with the Greek language may be admitted to Course 8.

9. Elementary Greek.—First Greek book and grammar. Xenophon. M., W., F., 9:30-10:30. Mr. Kinsella.

10. The New Testament.—A course in grammar and translation. Two hours or more; to be arranged with the instructor. Throughout the year. Mr. Kinsella.

Course 10 alternates with Course 16.

11. Advanced Course in the Greek Drama.—*Iphigenia, Antigone, Agamemnon, Aves, Ranae.* M., W., F., 10:30-11:30. Professor Harry.

12. Xenophon's *Hellenica, first semester. Symposium, Memorabilia, second semester.* T., Th., 10:30-11:30. Mr. Kinsella.

15b. Intermediate Greek.—Prose Composition. Homer, I-III. M., W., F., 11:30-12:30. Mr. Kinsella.

16. Hellenistic Greek.—Philo and other writers of this period. Two hours throughout the year; to be arranged with the instructor. Mr. Kinsella.

Course 16 alternates with Course 10.

18. Advanced Course in Greek Drama.—*Bacchae, Ajax, Vespae, Pax.* M., W., F., 10:30-11:30. Mr. Kinsella.

Course 18 alternates with Course 11.

To be given in 1913-14.

For Undergraduates and Graduates

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit

and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Pre-Hellenic archaeology, Greek architecture, and sculpture (1911-12); sculpture, vase paintings, coins, gem engraving, wall paintings (1912-13). T., 10:30-11:30.

Professor Harry.

This class is limited to forty students.

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.

Professor Harry.

7. Greek Seminary.—Aristophanes (1912-13); Homer (1913-14). M., 3:00-5:00.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

For Teachers

17. Teachers Course in First Year Greek.—S., 10:30-11:30.

Professor Harry.

18. Teachers Course in Xenophon and Homer.

Professor Harry.

HISTORY

Merrick Whitcomb, Ph. D., ... Professor of History.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
James Francis Dilworth, A. M., . Instructor in English History.
Assistant: Reginald C. McGrane.

For Undergraduates

1. Middle Ages—Renaissance.—This course includes the main facts of European history from the fall of the Roman Empire to the beginning of the Lutheran Reformation. Lectures and recitations. M., W., F., 9:30-10:30.

Professor Whitcomb, Mr. Dilworth, and Mr. McGrane.

3. The Revolution and Napoleon.—Beginning with the Bourbon period this course includes a study of the Ancien Régime and the French Revolution, and follows the fortunes of Napoleon to 1815. Lectures and recitations. M., W., F., 10:30-11:30.

Professor Whitcomb, Mr. Dilworth, and Mr. McGrane.

13. General Course in English History.—This course, while open to all students, is especially recommended for those who desire a general introductory course as preparatory to the study of both European and American history. The course traces the development of the English people from the earliest times to the pres-

ent. The method is by lecture, text-book, and source-book. M., W., F., 1:00-2:00. Mr. Dilworth.

29. Ancient History to 476, A. D.—This course comprises a brief survey of the development of the principal Oriental nations; the political and the social life of the Greeks; the early political life and expansion of the Roman people, and their social and economic development under the Empire. T., Th., 8:30-9:30.

Mr. Dilworth.

15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. The work covers the period from the earliest discoveries to the present time and is based largely upon a text-book, supplemented by regular reports and lectures. Special quiz sections and conference groups at other hours, if necessary. M., W., F., 8:30-9:30. Associate Professor Cox.

For Undergraduates and Graduates

25. European History Since 1814.—An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization T., Th., 10:30-11:30.

Professor Whitcomb.

Open to Seniors; to Juniors by permission.

46. History of Germany.—Beginning with the early Germans this course will follow the history of the German peoples down to the present time. The relations of the Germans to the Roman Empire; conquests of Charles the Great; the Medieval Empire; the Reformation; rise of the Hohenzollern dynasty; period of Frederick the Great; Napoleon; Wars of Liberation; organization of the German Empire. T., Th., 10:30-11:30.

Professor Whitcomb.

Omitted in 1912-13.

21. American Constitutional History.—The course treats of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. M., W., F., 11:30-12:30.

Omitted in 1912-13.

22. American Constitutional History (Continued).—A review of the leading governmental problems connected with the Civil War and Reconstruction Periods, and the subsequent industrial and territorial expansion of the United States. Lectures and special reports. M., W., F., 11:30-12:30. Associate Professor Cox.

Open to those who have had Course 15 or an equivalent.

28. Problems of American Expansion.—A general view of the territorial development of North America with the United States as its chief factor. Emphasis will be given to filibustering operations in connection with Spanish-American relations. Lectures and special reports. T., Th., 9:30-10:30. Associate Professor Cox.

Open to those who have had Course 15 or an equivalent.

40. English Constitutional History.—The course traces the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 8:30-9:30. Mr. Dilworth.

Omitted in 1912-13.

44. English History Since 1856.—This course deals with the political, economic, and religious history of England since the close of the Crimean War and with the present day problems. Students are requested to subscribe to *The London Times* (Weekly Edition). T., Th., 11:30-12:30. Mr. Dilworth.

Open to Seniors and Juniors.

For Teachers

43. English History for Teachers.—The history of England in the last century and a study of present day problems. Students are asked to subscribe to *The London Times* (Weekly Edition).

Mr. Dilworth.

Course 43 is also open to upper-class students by consent of the instructor.

Courses 31 and 39 (see above) are open to properly qualified teachers.

LATIN

John Miller Burnam, Ph. D., ... Professor of Latin.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.

For Undergraduates

1. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Lectures on the periods of Roman history comprised in the sections from Livy and on the life and times of Horace. Sec. I, T., Th., S., 8:30-9:30; Sec. II, M., W., F., 1:00-2:00. Professor Burnam and Assistant Professor Semple.

2. Cicero, Tacitus, Horace.—Cicero's *Laelius,* Tacitus' *Agricola* and *Catallus,* selections from Horace's Satires and Epistles; prose composition based on the text of the *Laelius,* and lectures on Roman institutions. Sec. I, T., Th., S., 9:30-10:30; Sec. II, M., W., F., 9:30-10:30. Assistant Professor Semple.

Course 2 is open to students who have completed Course 1.

3. Cicero and Pliny.—Selections from their correspondence; the Letter as a form of Latin literature. Lectures and reports on topics connected with Roman private life and social customs. The stereopticon will be employed when the topics under consideration suggest this mode of treatment. M., W., F., 11:30-12:30.

Assistant Professor Semple.

Course 3 is open to students who have passed in Courses 1 and 2.

4. Lucretius, Virgil, and Seneca.—Three hours, to be arranged.

Professor Burnam.

Course 4 is open to students who have passed in Courses 1 and 2.

5. Latin Literature.—A general survey of the life and letters of the Roman people from the earliest times until the later Empire. W., 2:00-3:00. Assistant Professor Semple.

This course may be extended to include two or three hours of credit by collateral reading, under the direction of the instructor, in the authors discussed in the lectures.

Primarily for Graduates

Hours in all cases to be arranged

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a. Caesar. Lectures, reports, and papers, on special topics. This course is intended, primarily, to afford the special training required by those who are preparing to teach Caesar. Three hours.

10b. Cicero. Omitted in 1912-13.

10c. Virgil. Omitted in 1912-13.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1912-13 (Course 10a) is Caesar. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

*MATHEMATICS

HARRIS HANCOCK, PH. D., D. Sc., . . . Professor of Mathematics.
STEPHEN ELMER SLOCUM, PH. D., Professor of Applied Mathematics.
LOUIS BRAND, A. M., . . . Assistant Professor of Mathematics.
FLORENCE CAMERON LAWLER, B. S., . . Instructor in Mathematics.
JOSEPH HENRY KINDLE, A. M., . . . Instructor in Mathematics.
——— ———, ... Instructor in Mathematics.

For Undergraduates

1. Algebra—Trigonometry — Analytical Geometry.— Selected portions of Algebra and the elementary Theory of Equations. Wentworth, *College Algebra.*

Trigonometry: Crockett, *Trigonometry;* Rothrock, *Trigonometry.*

Analytical Geometry of Two Dimensions treated from the Cartesian standpoint. Nichols, *Analytic Geometry.*

Sec. I, M., T., W., Th., F., 8:30-9:30. Miss Lawler.
Sec. III, M., T., W., Th., F., 10:30-11:30. Miss Lawler.
Sec. IV, M., T., W., Th., F., 9:30-10:30. Miss Lawler.

4a. Solid Geometry (Elementary).—Wentworth, *Solid Geometry.* T., Th., 9:30-10:30, *first semester.* Mr. ———.

Omitted in 1912-13.

3b. Spherical and Analytical Trigonometry.—Crockett, *Spherical Trigonometry.* T., Th., 9:30-10:30, *second semester.* Mr. ———.

Omitted in 1912-13.

5. Calculus, Differential and Integral.—Osborne, *Calculus.* M., T., Th., F., 10:30-11:30.

Sec. I, Professor Hancock.

For Undergraduates and Graduates

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 9:30-10:30. Professor Hancock.

6a. Advanced Analytical Geometry of Two Dimensions.—C. Smith, *Conic Sections.* Lectures. M., W., F., 10:30-11:30, *first semester.* Mr. ———.

Course 6a is open to graduate students and to those who have passed in Course 5.

Omitted in 1912-13.

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* See courses in Mathematics and Applied Mathematics, College of Engineering.

7. Analytical Geometry of Three Dimensions.—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry.* Lectures and text. T., Th., S., 10:30-11:30, *first semester.* Professor Slocum.

Course 7 is open to graduate students and to those who have passed in Course 5.

Omitted in 1912-13.

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*

Professor Hancock.

Omitted in 1912-13.

9b. Differential Equations.—Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*

Professor Hancock.

Omitted in 1912-13.

Primarily for Graduates

33. Advanced Algebra.—Lectures. T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

16a. Theoretical Mechanics.—A modern treatment of analytical mechanics, intended especially for advanced students in engineering and physics. The course is given by lectures, supplemented by references to standard texts. *First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

16b. The Mathematical Theory of Elasticity.—A course in the mechanics of elastic bodies, supplementary to Course 16a. The course is given mainly by lectures, supplemented by references to the works of Williamson, Webster, and A. E. H. Love. *Second semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.

26a. The History and Teaching of Mathematics.—A course in the pedagogy of mathematics, based chiefly on the historical development of the subject. Modern pedagogical theories are studied in their relation to mathematics and used as a basis for the discussion of laboratory and other special methods of instruction. Synopsis of the material which has been prepared by the instructor for the International Congress of Mathematicians. *First semester.* Hours to be arranged. Professor Slocum.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with

applications to problems in heat, electricity, potential, elasticity, etc. *Second semester*, Th., 4:00-6:00; S., 9:30-10:30.

Professor Slocum.

Omitted in 1912-13.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations*. The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. *First semester*, M., 4:00-5:00; W., 4:00-6:00.

Professor Slocum.

Omitted in 1912-13.

30. Theory of Numbers, Part I.—Natural Numbers.—Lectures founded on the Berlin lectures of Kronecker, Frobenius and Dirichlet's Zahlentheorie. T., 4:00-6:00; S., 10:30-12:30.

Professor Hancock.

Omitted in 1912-13.

31. Theory of Numbers, Part II.—Algebraic Numbers.—Dedekind's Theory. T., 4:00-6:00; S., 10:30-12:30.

Professor Hancock.

Omitted in 1912-13.

32. Theory of Numbers, Part III.—Kronecker's Theory. T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.

Omitted in 1912-13.

24. Elliptic Functions, Part I.—Analysis. The published lectures of the professor. Professor Hancock.

Omitted in 1912-13.

25. Application of Elliptic Functions, Part II.—The general theory of Course 24 specialized and illustrated by problems in Mechanics and in the Theory of Numbers, and through geometrical investigations, including the analytical representation of curves and surfaces. The solution of certain algebraical and differential equations. Construction of tables of elliptic integrals. The general theory of transformation. Lectures. W., 4:00-6:00; S., 11:30-12:30.

Professor Hancock.

Omitted in 1912-13.

20. Theory of Maxima and Minima Involving Several Variables.—*The Calculus of Variations* (the published lectures of the professor). W., 4:00-6:00; S., 11-30-12:30. Professor Hancock.

Omitted in 1912-13.

18a. Theory of Minimal Surfaces.—The developments of Lie, Darboux, Schwarz, and Weierstrass compared with those of earlier writers. Lectures. T., Th., S., 8:30-9:30, *first semester*.

Professor Hancock.

Omitted in 1912-13.

For Graduates Only

30. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to work done. Hours by special arrangement. Professor Slocum.

For Teachers

12. Algebra, Trigonometry and Analytical Geometry of Two Dimensions.—T., 4:00-6:00; S., 9:30-11:30. Mr. ———.

23. Advanced Analytical Geometry of Two Dimensions.—Analytical Geometry of Three Dimensions.—W., 4:00-6:00; S., 9:30-11:30. Mr. ———.
Omitted in 1912-13.

14. Calculus.—M., Th., 4:00-6:00. Mr. Kindle.
Omitted in 1912-13.

13. Theory of Equations.—M., Th., 4:00-6:00. Mr. Kindle.
Omitted in 1912-13.

22. Advanced Integral Calculus.—Differential Equations. W., 4:00-5:00; S., 9:30-11:30. Professor Hancock.
Omitted in 1912-13.

Courses 12, 14, 13, 22, and 23 include the same subjects as Courses 1, 5, 15, 8a and 9b, 6a and 7b, respectively, and the same credits are allowed on the Registrar's books.

PHILOSOPHY

Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Helen Thompson Woolley, Ph. D., . . Instructor in Philosophy.

For Undergraduates

1a. Introduction to Philosophy.—An outline study of the field of philosophical discussion, with a definition of its chief problems and the method of investigating them. Open to students who have completed one year of university work. *First semester,* M., W., F., 11:30-12:30. Dr. Woolley.

2b. Logic.—An introductory course in real logic, the theory of reasoning, including the essentials of formal logic and the principles of proof. Open to students who have completed at least one year of work in the University. *Second semester,* M., W., F., 11:30-12:30. Dr. Woolley.

For Undergraduates and Graduates

3a. Ancient and Mediaeval Philosophy.—An historical review of typical world-views of ancient Greece and Rome, together with a brief study of the science and philosophy of the Middle Ages. Open to students who have completed one year of work in the University. *First semester,* M., W., F., 9:30-10:30. Professor Tawney.

4b. Modern Philosophy.—An outline history of science and philosophy from the beginning of the sixteenth century to the present time. Open to students who have completed one year of work in the University. *Second semester,* M., W., F., 9:30-10:30. Professor Tawney.

5a. Ethics.—An introduction to the theory of morals. The course includes, beside the theory of morality, discussions of selected problems of present moral experience. Open to students who have completed two years of work in the University. *First semester,* M., W., F., 10:30-11:30. Professor Tawney.

6b. Political Philosophy.—A study of fundamental principles of political organization and control, including the origin of the state, the relation of morality to legislative control, the concepts of natural law, natural right, the general will, the rule of majorities, etc. Open to students who have completed at least two years of work in the University. *Second semester,* M., W., F., 10:30-11:30. Professor Tawney.

7a. Principles of Science and Theory of Scientific Method.—This course begins with a survey of the principles of scientific method based on Course 2b, and includes a study of the methods of five groups of sciences, namely, the mathematics, biology, physics, psychology, and philosophy. *First semester,* M., W., F., 11:30-12:30. Course 2b is prerequisite. Professor Tawney.

8b. Elements of Philosophy.—A systematic discussion of the problems of philosophy. Text-book, lectures, and reports. Prerequisites are either 1a, 2b, 3a, or 4b. *Second semester,* M., W., F., 11:30-12:30. Professor Tawney.

Primarily for Graduates

9. Types of Philosophy.—A critical study of contemporary idealism, realism, pragmatism, and agnosticism, as exemplified in the writings of recent authors. This course is one of a cycle with Courses 10 and 11 and will be given in 1912-13. Two hours throughout the year. Th., 12:30-2:30. Professor Tawney.

10. Philosophical Method.
Omitted in 1912-13. Professor Tawney.

11. Kantian and Post-Kantian Idealism.
Omitted in 1912-13. Professor Tawney.

For Teachers

12. The History of Philosophy.—In the fall of 1912 this course will begin with the philosophy of the Middle Ages, it being part of a cycle of courses dealing with the history of philosophy. One hour throughout the year. S., 9:30-10:30. Professor Tawney.

13. Educational Philosophy.—A study of the relations between certain typical philosophical methods and the theory and practice of education.

Omitted in 1912-13.

14. The Field of Logic.—An introduction to the science of logic with special reference to the methods of recitation.

Omitted in 1912-13.

It should be remembered that work in the Department of Philosophy is facilitated by courses in psychology, sociology, political science, general history, economics, the history of education, art, and other allied subjects dealing with human life and the products of civilization.

PHYSICAL EDUCATION

Alfred Brodbeck, ... Director of Physical Education.
Marguerite Gray, A. B., . . . Instructor in Physical Education.

Physical Training for Men.—All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: Three hours per week for all members of the freshman class (lectures on hygiene, one hour, work in the gymnasium, two hours), and two hours per week for all members of the sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A physical examination is required of each student of the two lower classes upon entrance and upon completion of the required work. Appointments for the examination must be made with the Physical Director at the beginning of the first semester.

Credit: One credit will be given for each semester's work.

Hours.—Phys. Ed. 1 (Freshmen). Gymnasium, T., Th., 10:30-11:30; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 4:00-5:00; T., Th., 11:30-12:30. Boxing, wrestling, fencing (voluntary).

Mr. Brodbeck.

Physical Training for Women.—The work is arranged with a view to obtaining the best hygienic, corrective and recreative results. A physical examination will be made at the beginning of the freshman and at the end of the sophomore year.

The course for freshmen consists of three hours attendance per week throughout the year. Two hours each week are spent in exercising in the gymnasium; the other hour is devoted to lectures on hygiene. The lectures must be attended by every member of the freshman class, irrespective of the fact that she may be excused from the gymnasium work.

The course for sophomores consists of two hours of exercise in the gymnasium, prescribed for all members unless excused by the Director of Physical Education or on a physician's certificate.

Credit: One credit will be given for each semester's work.

Hours—Phys. Ed. 1 (Freshmen), M., W., 2:00-3:00, T., Th., 10:30-11:30; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 11:30-12:30, 1:00-2:00.

Voluntary Class.—T., Th., 9:30-10:30. Miss Gray.

PHYSICS

Louis Trenchard More, Ph. D., ... Professor of Physics.
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
——— ———, ... Instructor in Physics.

Assistants: Mr. Evens, Mr. Mauchly.

For Undergraduates

26a. General Physics.—Lectures and recitations on mechanics, sound, and heat, illustrated with lecture experiments. *First semester,* M., W., F., 11:30-12:30. Professor More and Assistant.

27b. General Physics.—Lectures and recitations on light, electricity and magnetism, illustrated with lecture experiments. *Second semester,* M., W., F., 11:30-12:30.

Professor More and Assistant.

N. B.—The above courses are designed for students in the College of Liberal Arts only; they may be elected in the freshman year. They will present the fundamental laws and phenomena of physics, and will be non-mathematical in treatment. Taken with Courses 2a and 22b, Experimental Physics, they satisfy the science requirement.

28a. Advanced General Physics.—Lectures and recitations on Mechanics and Heat. *First semester.* Twice weekly.

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29b. Advanced General Physics.—Lectures and recitations on Light, Electricity, and Magnetism. *Second semester.* Twice weekly.

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Prerequisites for Courses 28 and 29 are Courses 26 and 27, and Mathematics 1.

2a. Experimental Physics.—Laboratory work arranged to accompany General Physics. *First semester.*

Associate Professor Allen, Dr. Gowdy, Dr. ———, and Assistants.

Sec. I, Th., S., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., W., 1:00-4:00.
Sec. VI, W., F., 1:00-4:00.

22b. Experimental Physics.—Laboratory work arranged to accompany General Physics. *Second semester.*

Associate Professor Allen, Dr. Gowdy, Dr. ———, and Assistants.

Sec. I, Th., S., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., W., 1:00-4:00.
Sec. VI, W., F., 1:00-4:00.

4. Advanced Experimental Physics.—Experiments in photometry, spectrum analysis, calibration of weights and thermometers, etc., requiring exact measurement. Twice weekly. It may be elected either semester. ————.

For Undergraduates and Graduates

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30. Professor More.

Omitted in 1912-13.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

Omitted in 1912-13.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester,* T., Th., S., 11:30-12:30. Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit given according to work done. ————.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Without credit. Mr. Evens.

17a. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *First semester,* M., W., 4:00-5:00.

Omitted in 1912-13.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester*, twice weekly. Associate Professor Allen.

For Graduates Only

7. Lectures on Theoretical Physics.—This course is designed to include three years work. In 1910-11 the lectures discuss the theory of heat and generalized coordinates; 1911-12, light; 1912-13, electricity and magnetism. Twice weekly. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Daily.
Professor More and Associate Professor Allen.

For Teachers

11. Laboratory Methods for Teachers.—This course comprises a set of experiments designed especially for teachers. The exercises will include those which are usually given in schools, and also those of a more difficult nature which illustrate the theoretical principles. S., 8:30-11:30.

POLITICAL AND SOCIAL SCIENCE

——— ———, ... Professor of Political and Social Science.
William Hammond Parker, A. M., Assistant Professor of Economics and Social Science.

SOCIAL SCIENCE

For Undergraduates

5. Elementary Sociology.—An introductory course designed to present a working theory of the nature of society, the prevailing types of social organizations, and the larger problems connected

therewith. The nature of sociology, facts of social evolution, social control, social organization, social ideals, social pathology, methods of social investigation, and the history of sociology. T., Th., 9:30-10:30. Assistant Professor Parker.

For Undergraduates and Graduates

7. Modern Social Theories.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, Small, and others. Particular attention is given to the development of social theory and to the consequences of the theories of these writers in the field of practical social reform. M., W., 10:30-11:30. Assistant Professor Parker.

20. Criminals and Delinquents.—Problems of Crime. Criminal anthropology, physical and psychical. Criminal diagnostics, definition of crime, detection and identification of criminals, state control of criminals. Criminal therapeutics, penalties, punishment and reformation of criminals, jails, prisons, and reformatories. Criminal hygienics, police prevention of crime, presumptive criminals. Principles of scientific penology, lynch-law, and the trend of crime in modern times. T., Th., 10:30-11:30.

Assistant Professor Parker.

15. Modern Philanthropy.—A study of the problems of charity. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. As an integral part of this course there will be a series of lectures on the scope and method of the work of the Associated Charities, the Department of Charities and Corrections of the City of Cincinnati, the House of Refuge, the Juvenile Court, the Juvenile Protective Association, the National Child Labor Organization, and the Social Settlement. The lecturers on these subjects will be Mr. T. J. Edmonds, secretary of the Associated Charities; Rev. J. O. White, superintendent of Union Bethel; Mr. E. N. Clopper, superintendent of the House of Refuge; Judge John A. Caldwell, of the Juvenile Court; Miss Helen Trounstine, secretary of the Juvenile Protective Association; and Dr. Boris D. Bogen, superintendent of the Jewish Settlement. M., W., 9:30-10:30.

Assistant Professor Parker.

21. Social Problems.—A study of current social problems and the influence of certain factors in social evolution. The function, origin, forms, development, and problems of the family. Problems of population, immigration, the negro, the city, poverty and pauperism, education, and social progress. T., Th., 11:30-12:30.

Omitted in 1912-13. Assistant Professor Parker.

22. Seminary.—Opportunity is here given for the detailed study of special problems in social science. Hours to be arranged.

Assistant Professor Parker.

UNIVERSITY OF ILL.
PRESIDENT'S OFFICE

POLITICAL SCIENCE

For Undergraduates

1a. Elementary Political Science.—An introductory study of the origin, development, and nature of the state, and the principal ideals of political action. Coincidently, the organization of the federal government of the United States is presented in outline. The primary aims of this course, in connection with Course 2b, are to prepare for the duties of citizenship and to lay a foundation for the further study of political science. Attention is also given to the needs of those students who intend to devote themselves to the law, journalism, the public service, or the teaching of civics. Two lectures, one quiz, per week. *First semester.* Section 1, lectures, M., W., 10:30-11:30; Quiz (for men only), F., 10:30-11:30. Section 2, lectures, M., W., 1:00-2:00; Quiz (for women only), F., 1:00-2:00. ———.

2b. Government and Parties in England and Continental Europe.—A study of the framework of government and the organization, methods, and aims of the leading political parties of England, France, and Germany. Particular attention is given to the constitutional documents of the countries studied and to the more accessible sources of official information regarding them. Wherever possible comparisons are drawn between the political institutions and problems of the countries studied and those of the United States. Designed as a continuation of Course 1a, but may be elected separately. Two lectures, one quiz, per week. *Second semester.* Section I, lectures, M., W., 10:30-11:30; Quiz (for men only), F., 10:30-11:30. Section 2, lectures, M., W., 1:00-2:00; Quiz (for women only), F., 1:00-2:00. ———.

For Undergraduates and Graduates

4. Political Parties and Party Problems.—A study of the organization, methods, and aims of existing political parties in the United States. The following subjects will be discussed: Journalism and public opinion, theory of the party system, primary and convention system, permanent party organization, the financing of parties, elements of cohesion in parties, and the principal recent aims pursued by political parties. T., Th., 10:30-11:30.

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6a. American Legislatures and Legislative Methods.—A detailed study of the manner in which law-making bodies—State and Federal—in the United States are organized and operated. *First semester,* M., W., 2:00-3:00. ———.

6b. Public Finance and Taxation.—An introductory course on the budget system and existing methods of levying and collecting

taxes, federal, state and local; the principles of taxation. *Second semester,* M., W., 2:00-3:00. ————.

11a. Municipal Government.—A comparative study of municipal government in the principal countries of Europe, England, and the United States, with particular reference to the reforms advocated in the latter country. Special financial and social problems of city life, such as municipal ownership, taxation of unearned increment, the drift of population to urban centers, the housing problem, sanitation, provision of facilities for recreation, the child problem in cities, etc., are also discussed. *First semester,* T., Th., 9:30-10:30. ————.

12b. The Government of Cincinnati.—A somewhat detailed study of the organization and functions of the government of Cincinnati. Particular attention is given to the special municipal problems involved in the contemporary development of the city, and to the relations existing between its government and the government of the state of Ohio and Hamilton County. *Second semester,* T., Th., 9:30-10:30. ————.

17. Selected Readings and Field Work.—Designed to afford opportunity for the more thorough study of the subjects considered in the preceding courses, but may be elected separately by students who have already completed one full year's work either in the department of Political and Social Science or in the department of Economics. Special attention will be given to bibliography. statistical presentation, and the preparation of reports in standard form. F., 2:00-3:00. ————.

Course 17 is recommended for students who have elected Courses 4b, 11a, 12b, and 15. Credit, one or two hours.

Primarily for Graduates

3. History of Political Ideas.—A study of the development of political thought. The first part of the course is devoted to a series of lectures on Oriental, Greek, Roman, and medieval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date are studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times will receive special attention. M., 4:00-6:00. ————.

19. Political Science Seminary.—A detailed study of the administrative organization of France and Germany. Special topics will be assigned for investigation and report by members of the seminary. Particular attention will be given to the proper peda-

gogical presentation of these subjects in lecture or text-book form. A reading knowledge of French or German is required. M., 4:00-6:00. ————.

PSYCHOLOGY

Burtis Burr Breese, Ph. D., ... Professor of Psychology.
Schachne Isaacs, A. B., ... Assistant in Psychology.

For Undergraduates

1a. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. *First semester.* M., W., F., 11:30-12:30. Professor Breese.

1b. A continuation of 1a.—Section 1. *Second semester.* M., W., F., 11:30-12:30. Professor Breese.

For Undergraduates and Graduates

2a. Experimental Psychology.—Laboratory course. *First semester,* M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—A continuation of 2a. *Second semester,* M., W., F., 2:00-4:30.
Professor Breese and Mr. Isaacs.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Hours to be arranged.
Professor Breese.

6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Hours to be arranged.
Professor Breese.

For Teachers

5. Elements of Psychology.—A general account of the facts of mental life and their application to education. One credit per semester for A. B. S., 11:30-12:30. Professor Breese.

8. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged. Professor Breese.

ROMANCE LANGUAGES

PHILLIP OGDEN, PH. D., . . . Professor of Romance Languages.
RALPH EMERSON BASSETT, A. M., Assistant Professor of Romance Languages.
LEROY JAMES COOK, A. M., ... Instructor in French.

For Undergraduates

1. Elementary French.—Fraser and Squair, *French Grammar and Reader;* Dumas, *L'Evasion du Duc de Beaufort;* Malot, *Sans Famille;* Labiche, *La Grammaire;* Daudet, *Le Petit Chose.* Composition based on Fraser and Squair's *French Reader.*

Sec. I, M., W., F., 11:30-12:30; Sec. II, T., Th., S., 10:30-11:30. Mr. Cook.

2. Intermediate French.—*First semester,* Fraser and Squair's *French Grammar,* Part II; François, *French Prose Composition;* dictation and modern texts. *Second semester,* nineteenth century prose writers, etc. Dictation and composition.

Sec. I, M., W., F., 9:30-10:30. Assistant Professor Bassett.
Sec. II, T., Th., S., 9:30-10:30. Mr. Cook.
Sec. III, M., W., F., 9:30-10:30. Professor Ogden.

Course 2 is open to students who have taken Course 1 or its equivalent.

11. French Literature in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Handbook: Lanson, *Histoire de la Littérature française.* M., W., F., 10:30-11:30. Professor Ogden.

Course 11 is open to students who have passed in Course 2.

3. French Composition.—Review of the more difficult points in French Grammar and Syntax. Dictation. Reproduction of narrative and descriptive passages read by the instructor from French authors. Conversation. Original composition in French.

Sec. I, T., Th., 11:30-12:30; Sec. II, T., Th., 8:30-9:30.
With the permission of the instructor. Mr. Cook.

Course 3 is open to students who have taken Course 2.

6. Elementary Spanish.—Pronunciation, grammar, composition, conversational drill. Text-books: Olmsted and Gordon, *Spanish Grammar;* De Haan and Morrison, *Cuentos modernos;* Padre Isla, *Gil Blas de Santillana;* Ramos Carrión, *Zaragüeta;* Valera, *Pepita Jiminez.* M., W., F., 10:30-11:30. Assistant Professor Bassett.

7. Elementary Italian.—Grandgent, *Italian Grammar;* De Amicis, *Cuore;* Serao, *All' Erta, Sentinella;* Testa, *L'oro e l'orpello;* Giacosa, *Come le foglie.* M., W., F., 10:30-11:30. Assistant Professor Bassett.

11. Spanish Composition.—Systematic practice in speaking and writing. Review of syntax. Letter writing. Ramsey, *La esencial del lenguaje castellano;* Harrison, *Spanish Correspondence;* Umphrey, *Spanish Composition;* Jäsche, *Spanish Conversational Dictionary.* Two hours to be arranged.

Assistant Professor Bassett.

For Undergraduates and Graduates

4. French Poetry in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Hugo, Musset, Gautier, Leconte de Lisle, etc. T., Th., 9:30-10:30. Professor Ogden.

Course 4 is open to students who have passed in Course 11.

5. French Drama in the Nineteenth Century. W., F., 1:00-2:00.

Mr. Cook.

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Cervantes, *Don Quijote;* selected plays of Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. T., Th., 10:30-11:30.

Assistant Professor Bassett.

Course 8 is open to students who have passed in Course 6 or Course 9.

9. Intermediate Spanish.—Representative works since 1850. Becquer, *Leyendas;* Caballero, *La gaviota;* Pereda, *Pedro Sanchez;* Péres Galdós, *Doña Perfecta;* Hartzenbusch, *El encogido y la coja.* Hours to be arranged. Assistant Professor Bassett.

10. Old French Readings.—Constans, *Chrestomathie de l'Ancien Français.* Lectures on historical French grammar. Hours to be arranged. Professor Ogden.

Course 10 is open to students who have passed in Course 4 or its equivalent.

13. French Literature in the Eighteenth Century.—Montesquieu, Voltaire, Diderot, J. J. Rousseau. Reading of selected works, lectures, reports. This course is given wholly in French. T., Th., 9:30-10:30. Professor Ogden.

Course 13 is open to students who have completed Course 4.

22. The Picaroon Novel.—*Lazarillo de Tormes;* Aleman, *Guzman de Alfarache* (Part I); Cervantes, *Novelas ejemplares;* Espinel, *Marcos de Obregon;* Yañez, *El donado hablador;* Chandler, *Romances of Roguery.* Two hours to be arranged.

Assistant Professor Bassett.

Course 22 alternates with Course 8 and is open to students who have passed in Course 9.

15. Dante.—The *Vita Nuova* (Barbi edition), the *Inferno* (Grandgent edition), and the *Purgatorio.* Lectures, collateral reading and reports. T., Th., 9:30-10:30. Professor Ogden.

Course 15 is open to students who have passed in Course 7. Omitted in 1912-13.

16. Italian Literature in the Nineteenth Century.—Manzoni, Fogazzaro, Serao, Verga, Capuana. T., Th., 11:30-12:30.
Alternates with Course 15. Professor Ogden.

24. Special Studies in Modern French Literature.—Philosophic School; Parnassian School; Symbolists. T., 4:00-6:00.
Assistant Professor Bassett.

Course 24 is open to students who have passed in Course 4 or Course 11.

26. The Novel in the Nineteenth Century.—Lectures; outside reading; conversation in French. T., Th., 8:30-9:30.
Professor Ogden.

27. The French Drama of the Nineteenth Century.—The Semi-Romantic, Romantic Schools, School of Good-sense. S., 10:30-11:30.
Professor Ogden.

Primarily for Graduates

12. Old French.—Old French phonology and inflections; versification. Lectures, text interpretation and collateral reading. Schwan-Behrens, *Grammaire de l'Ancien Français.* W., 1:00-3:00.
Professor Ogden.

Course 12 is open to students who have passed in Course 4.

14. Early Spanish.—Phonology and inflections. *El poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged.
Assistant Professor Bassett.

Course 14 is open to students who have passed in Course 8 or 22.

19b. Provençal Language and Literature.—Reading of Provençal texts, especially the poetry of the Troubadours. Text-books: Carl Appel, *Provenzalische Chrestomatie* (2d ed., Leipzig, 1902); Grandgent, *An outline of the Phonology and Morphology of Old Provençal.* T., 2:00-4:00. Professor Ogden.

17. Seminary.—French Prose in the Nineteenth Century. 8:30-10:30. Professor Ogden.

25a. Phonetics.—A general introduction to linguistic science. A systematic study of the organs of speech, followed by an examination of the most important sounds in modern languages, especially English, French and German. A phonetic alphabet will be used, and students will be given practice in phonetic transcription. Half course, *first semester.* Hours to be arranged.
Assistant Professor Bassett.

For Teachers

30. Intermediate French.—Advanced grammar, composition, conversation. One credit per semester for A. B. S., 8:30-9:30.

Mr. Cook.

24. Course 24, outlined above, is open to teachers, by permission, as well as to regular students.

Teachers who are pursuing graduate studies and are qualified to do advanced work in the Romance languages can elect courses from the above upon advice from the head of the department.

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*DRAWING, MODELING, AND CARVING

By an arrangement with the Art Academy of Cincinnati (originally established as the McMicken School of Design in 1869, and a department of the University of Cincinnati from 1871 to 1884, when it was transferred to the Cincinnati Museum Association) students of the University may elect courses in Drawing, Modeling, and Carving at the Art Academy in 1912-13, and, upon presentation of the proper certificate from the Director of the School, may receive credit in the Registrar's office for such courses as part of the total number of "credits" required for the degree of Bachelor of Arts. On the payment of a fee of twenty-five dollars at the office of the Art Academy, the student is admitted to the several day classes (drawing, modeling, and carving). For the night classes the fee is five dollars. In the Summer Term of ten weeks no instruction is given at night. The Winter Term extends from September 23, 1912, to May 30, 1913, the Summer Term from the middle of June to the end of August.

The following courses of instruction are offered:

1. Free-hand Drawing.—From objects and casts. Day classes, M., W., F., 8:45-12:45, or M., W., 1:30-4:30, and S., 8:45-12:45. Night classes, T., Th., F., 7:15-9:15.

Miss Young, Miss Miller, Miss Wilson, and Mr. Nuse.

Color work in oils, water colors, or pastels is also taught in the day classes, but not at night.

2. Drawing and Painting from Life.—Figure or head. Day classes, M., T., W., Th., F., S., 8:45-12:45, and M., T., W., Th., F., 2:00-4:00. Night classes, M., T., W., Th., F., 7:15-9:15.

Mr. Duveneck, Mr. Meakin, and Mr. Wessel.

Artistic Anatomy is a part of this course. The night classes draw the head or figure from life.

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* For the teachers' training course in art, see announcement of the College for Teachers.

3. Modeling.—From casts. Day classes, T., Th., S., 8:45-12:45. Night classes, M., W., 7:15-9:15. Mr. Barnhorn.

4. Modeling. Advanced Course.—From life. Day classes, M., T., W., Th., F., S., 8:45-12:45. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Barnhorn.

5. Wood Carving.—M., W., F., 12:30-4:30, and S., 8:45-12:45. Mr. Fry.

6. Decorative Design.—The principles of design, preparation of decorative motives, and their application to metals, enamels, leather, porcelain, etc. T., W., Th., F., 1:30-4:30. Miss Riis.

From the courses above offered a student may elect not more than six hours in any one semester. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

COLLEGE FOR TEACHERS

The College for Teachers is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati.

COMMITTEE IN CHARGE

Charles William Dabney, Ph. D., LL. D., President of the University.
Arch I. Carson, M. D., Member of the Board of Directors of the University.
Frank Benjamin Dyer, LL. D., Lit. D., Superintendent of Cincinnati Schools.
Emil Pollak . . . . . Member of the Board of Education.

FACULTY AND INSTRUCTORS

Charles William Dabney, Ph. D., LL. D., President of the University.
Frank Benjamin Dyer, LL. D., Lit. D., Superintendent of Cincinnati Schools.
William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education, and Dean of the College for Teachers.
John William Hall, A. M., Professor of Elementary Education.
Henry Skinner West, Ph. D., Professor of Secondary Education.
Burtis Burr Breese, Ph. D. . . . . Professor of Psychology.
Nevin Melancthon Fenneman, Ph. D., Professor of Geology and Geography.
Guy Allan Tawney, Ph. D. . . . . Professor of Philosophy.
Harris Miller Benedict, A. M. . . . . Professor of Botany.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Alice Cynthia King, A. M., Assistant Professor of Elementary Education.
J. Ernest Carman, B. S., M. Di., . Assistant Professor of Geology.
——— ———, ... Instructor in Elementary Education.
Vernon Lantis, A. M. . . . . Instructor in Botany.
Annette Braun, Ph. D., ... Instructor in Biology.

OTHER OFFICERS OF INSTRUCTION

Courses in special subjects are given by the following persons connected with the Cincinnati public schools:

Walter H. Aiken . . . . . Music.
William H. Vogel . . . . . Art and Hand Work.
Carl Ziegler, M. D. . . . . Physical Training and Hygiene.
A. H. Steadman . . . . . Penmanship.
H. H. Fick . . . . . German.
Mary Elizabeth Hyde . . . . . Art.
William P. Teal . . . . . Art.
Jeannette Swing . . . . . Art.

The technical instruction and training in kindergarten courses is given by the following persons on the teaching staff of the Cincinnati Kindergarten Training School:

Lillian H. Stone . . . . . Principal.
Julia S. Bothwell . . . . . Supervisor.
Grace Anna Fry . . . . . Supervisor.
Josephine Simrall . . . . . Instructor.
John Jerome Thompson . . . . . Art.

At the Art Academy of Cincinnati:

Elizabeth Kellogg . . . . . History of Art.

GENERAL STATEMENT

The College for Teachers is the department of education of the University. It is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati. It is primarily a professional school for the training of teachers under University auspices, in close touch with a cosmopolitan public school system which serves as a working laboratory for teachers and students of education. Affiliated with the college are the Cincinnati Kindergarten Training School, the Art Academy of Cincinnati, and the Cincinnati Public Schools.

GENERAL REGULATIONS

The conditions governing admission, graduation, prerequisites, privileges, etc., vary with the different professional programs offered, and are best indicated in connection therewith, as follows:

PROGRAM I. For those fitting, primarily, for positions in elementary schools.

Admission.—This program is open to seniors and graduates, and may be pursued during a single year.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts without being compelled to carry more than three hours work per semester in addition to the courses in education indicated below.

Prerequisite Courses.—Before entering upon this program students must have had, as a part of their college courses, and as suitable prerequisites to the courses in education, the equivalent of the following:

Psychology, three hours per week for one year.
Ethics, three hours per week for one-half year.
Physiography, five hours per week for one year.
American history, three hours per week for one year.

Those who have had a year's study in American history in high school shall be exempt from the requirement in this subject.

COURSES REQUIRED.—

Education 1	6 credits.
Education 2	6 "
Laboratory work (30 hours' practice teaching in connection with Education 2)	2 "
Education 4	2 "
Elected from the following	8 "
Education 14	4 credits.
Education 16	2 "
Education 20	2 "
Education 22	2 "
Total	24 credits.

GRADUATION AND PRIVILEGES.—Seniors who complete the above courses in education may count the same toward the A. B. degree in the McMicken College of Liberal Arts and receive a Teacher's Diploma from the College for Teachers. This diploma entitles the graduate to a place on the preferred list of those who are eligible to appointment in the Cincinnati schools without examination except in Theory and Practice of Teaching, after two months of successful practice teaching.

Graduate students, in addition to receiving a Teacher's Diploma, will be given opportunity to fulfill the required practice teaching in the public schools during this year of study, so that they may become eligible to appointment in the local schools at the end of the year. They will also be permitted, by doing satisfactory pieces of independent work in connection with the courses in Education 1 and Education 2, to count either or both of these courses toward the A. M. degree in the Graduate School. They will not, however, be permitted to register in other courses in the University without the approval of the Dean of the College for Teachers, and in no case will they be permitted to choose work in any other department of the University in excess of three hours per semester.

All students pursuing this program have the further privilege of taking the brief courses in special subjects given by supervisors of the city schools on Saturday mornings (Education 32, 34, 36 and 38), in lieu of passing examinations in the teaching of these subjects.

PROGRAM II. For those fitting, primarily, for positions in secondary schools.

ADMISSION.—This program is open only to graduates, with the approval of the Dean of the College for Teachers, the Dean of the Graduate School, and the head or heads of the University

departments in which the student wishes to pursue advanced study; it may be taken in a single year. Students must give satisfactory evidence that they are well qualified, personally and otherwise, to undertake the work of this program and to become teachers in secondary schools. Such students must be willing to give two full high school sessions per week throughout the year (Tuesdays and Thursdays) as assistants in high school departments in which they are preparing to teach. Before registration a student must also be accepted by the principal of the high school and the head of the high school department in which apprenticeship is to be served; and in no case while pursuing this program will a student be permitted to choose more than the maximum of hours indicated below.

Prerequisite Courses.—Psychology and Ethics, as indicated in Program I.

Courses Required.—

Education 1, as indicated in Program I	6	credits.
Education 3	4	"
Practical Work	2	"
Graduate work in not more than two subjects which the student is best qualified to teach	12	"
Total	24	credits.

Graduation and Privileges.—Completion of this program does not entail any privilege as to preference in appointment to positions as teachers in the local high schools, as is the case with the completion of Program I in relation to the local elementary schools. Nor, under the law of this state, can it exempt the graduate from an examination for a teacher's high school certificate, as Program I exempts a candidate for a teacher's elementary certificate from examination, except in Theory and Practice of Teaching.

This program, however, with the provision which it makes for practical touch with high school work, will entitle graduates who complete it in a satisfactory manner to favorable consideration for positions in accredited schools of the University and in high schools generally, both public and private. It is for meeting the demands upon the University for teachers of this class that this program is primarily intended.

Preference in appointment to positions in the local high schools is given to college graduates who have had successful experience as regular teachers in elementary or secondary schools, who have achieved high rank as students in subjects which they wish to teach, who have made a professional study of the principles and problems

of secondary education, and who obtain satisfactory marks in the high school examination conducted by the local Board of Examiners.

College graduates teaching in local elementary schools who aspire to appointment in the high schools of Cincinnati should pursue advanced courses in subjects which they wish to teach and take Education 3. Provision for doing this will be arranged at hours which do not conflict with class room duties.

PROGRAM III. For those fitting, primarily, for positions in kindergartens.

ADMISSION.—This program is open to seniors and graduates and may be pursued during a single year.

Seniors must have not less than ninety credits in the College of Liberal Arts, including all required courses in that college, and the prerequisite courses indicated below. Both seniors and graduates may be permitted to carry Biology 36 or 37, but with this exception students shall give their time undividedly to this program.

PREREQUISITE COURSES.—

Psychology, as in Program I.
Ethics, as in Program I.
Education 1.
Biology 36 and 37. Students who have elected Zoology in fulfillment of the science requirement in the College of Liberal Arts may omit Biology 36; those who have elected Botany may omit Biology 37.

COURSES REQUIRED.—See list under Kindergarten Training, page 123.

GRADUATION AND PRIVILEGES.—Graduates who have completed the above program in a satisfactory manner may count the same toward the degree of Bachelor of Arts in Education conferred by the College of Liberal Arts and the College for Teachers jointly, and receive diplomas from the Cincinnati Kindergarten Training School certifying that they are qualified to be directors in kindergartens. They will also be eligible to appointment in the local public kindergartens without examination except in the Theory and Practice of Kindergartening.

PROGRAM IV. For those fitting, primarily, for positions as teachers of German in elementary schools.

ADMISSION.—This program is open to seniors and graduates, and may be pursued during a single year.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts, toward which this program will count to the extent of eighteen credits.

PREREQUISITE COURSES.—Before entering upon this program students must have had, as a part of their previous college courses, and as suitable prerequisites to courses in education, the equivalent of the following:

Psychology, as in Program I.
Ethics, as in Program I.
For those who have had no German in high school, the equivalent of German 1, 2, 3, 4, 21, 5 and 10 or 20.
For those who have had two years of German in high school, the equivalent of German 2, 3, 4, 21, 5 and 10 or 20.
For those who have had four years of German in high school, the equivalent of German 4, 21, 5 and 10 or 20.

In no case will students be permitted to enter upon this program without the ability to speak the German language readily and fluently.

COURSES REQUIRED.—

Education 1	6	credits.
Education 2	6	"
Education 4	2	"
Education 30, with fifteen hours' practice per semester	4	"
Total	18	credits.

GRADUATION AND PRIVILEGES.—The same as in Program I, with the following modifications:

The restrictions as to the amount of other work to be carried by students does not apply to those pursuing this program. They shall, however, submit their cards to the Dean of the College for Teachers for his approval before registration. They should also arrange, if possible, to take the courses given on Saturday mornings by the Supervisors of Drawing and Music in lieu of examinations in these subjects.

PROGRAM V. For those fitting for positions as instructors in education, supervisors, critic teachers, or administrators in educational positions requiring experience and advanced study.

For meeting the needs of this class of students appropriate opportunity is given in advanced courses in education, including seminar work, and such courses may be counted toward fulfilling requirements for the higher degrees conferred by the Graduate School. For further information see statements in connection with the description of various courses.

PROGRAM VI. For those fitting for positions as teachers or supervisors of art.

See pages 125-127.

SPECIAL COURSES

Special Courses are offered to teachers in Cincinnati and vicinity, and are given on Saturdays and at hours during the week which do not conflict with the duties of the class-room. Credit is given on the books of the Registrar for satisfactory work done in these courses.

For other courses open to teachers, see the announcement of the various departments of the McMicken College of Liberal Arts under the head "For Teachers."

REQUIREMENTS OF THE CINCINNATI BOARD OF EDUCATION

For the benefit of students who wish to become teachers in the schools of Cincinnati a Circular of Information has been prepared showing the method of appointment, salaries, and character of the examination for teachers who are candidates for positions in the Cincinnati Public Schools. A copy of this circular may be had upon application to the Superintendent of Schools or the Dean of the College for Teachers.

APPOINTMENT COMMITTEE

The Appointment Committee offers its services, without charge, to students seeking appointment to educational positions for which they are properly qualified. The Dean of the College as Chairman is assisted by other members of the faculty who are familiar with the student's work, and students who are candidates for appointment and who desire to avail themselves of the services of this committee are invited to register at the office of the Dean, on blanks provided for this purpose.

COURSES OF INSTRUCTION

The following is the list of courses offered for the year 1912-13. Certain of these courses are required of candidates for the first or preferred list of persons eligible to appointment in the Cincinnati schools. Others are intended to meet the needs of advanced students of education, as well as of teachers of experience. Courses which are prerequisite to the pursuit of the various professional programs for teachers are also included in this announcement, but with this exception only those which are primarily professional in character will be found here. All courses given in

the University, many of which are semi-professional in character, are open to properly qualified students in the College for Teachers. (See the announcement of the McMicken College of Liberal Arts.)

EDUCATION

Education 1. History and Principles of Education.—Lectures, required reading, and discussions. Beginning with primitive society, this course considers the various conceptions of education as they have arisen in the course of history. Special attention will be given to those conceptions which have been most instrumental in shaping current tendencies. Open to seniors and graduates. When pursued by a graduate student this course may be counted for credit toward a graduate degree provided the student does a satisfactory piece of independent work and embodies the results of the same in an acceptable written thesis. A graduate student wishing to so count this course must declare his or her intention to this effect at the time of registration. This course is also a prerequisite for students pursuing Program III, and as such may be taken during the junior year. (See page 113.) M., W., F., 10:30-11:30. Professor Burris.

Education 2. Theory and Practice of Teaching.—Lectures, discussions, practical work, and required readings. Development of the principles of method of the recitation and their application in the proper conduct of class exercises in the several subjects of the elementary schools. Three hours of class work and fifteen hours of practice per semester. Hours for practice work must be arranged with the instructor before registration. Open to seniors and graduates. Under the same conditions as those indicated under Course 1, when taken by a graduate student, this course may count toward a graduate degree to the extent of six credits. M., W., F., 9:30-10:30. Professor Hall.

Education 3. Principles and Problems of Secondary Education.—The first part of the course will consider the principles of secondary education, with special reference to those derived from the psychology of adolescence. The second part of the course will be devoted to a critical consideration of the problems of high school organization, with special reference to courses of study relative value of studies, and methods of instruction. Open to graduates and teachers, who contemplate appointment to high school positions. For the conditions under which graduate students may enter the course see Program II, p. 111. S., 9:30-11:30.

Professor West.

Education 4. School Economy.—Lectures, discussions, and required readings. This course will consider principles and practice of class-room management, including such problems as preventing the waste of time and energy, preserving hygienic conditions, discipline, grading, promotions, tests. Open to seniors and graduates. This course may not be counted for the higher degrees. F., 11:30-12:30. Assistant Professor King.

Education 6. General Method.—This course is similar to Education 2 and is intended especially for appointees to positions in the public schools of Cincinnati who have not had a course in this subject. S., 9:30-10:30. This course may count as graduate work under the same conditions as are indicated in connection with statement on Education 1. One section in this course will be given at 8:30 in case the number registered for it requires a division of the class. Professor Hall.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. W., 4:00-6:00. Professor Burris.

Education 9. Statistical Study of Educational Questions.—Open to graduates and teachers of experience. M., 4:00-6:00. Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Place of meeting to be arranged. For graduates of the College for Teachers and others properly qualified who wish to prepare for supervisory positions. W., 4:00-6:00. Professor Hall.

Education 13. History of Modern Education.—This course is arranged to meet the needs of students in the Cincinnati Kindergarten Training School and of those in the Course for Teachers of Art who are not candidates for a degree. *First semester,* M., W., F., 3:00-4:00. Professor Burris.

Education 14. The Teaching of English.—Lectures, discussions, and required readings. This course will consider the selection and organization of the subject matter and method of treatment in the grades of the following subjects: reading, spelling, literature, composition, and grammar. Open to seniors and graduates; it may be counted toward the A. B. degree. M., W., 8:30-9:30. Assistant Professor King.

Education 16. The Teaching of History.—Lectures, discussions, readings, and reports. This course aims to cover the field of history as usually presented in elementary schools. Gathering material for lesson plans, its arrangement for presentation, the consideration of difficulties involved, and the method of overcom-

ing the same will form the basis of the course. Open to seniors and graduates; it may be counted toward the A. B. degree. F., 8:30-9:30. ——— ———.

Education 20. The Teaching of Mathematics.—Lectures, discussions, and required reading. This course will aim to work up portions of material for presentation in the various grades according to the course of study, with devices and methods for their use. The principles underlying the above will be developed. Open to seniors and graduates; it may be counted toward the A. B. degree. *Second semester,* M., W., 11:30-12:30.

Assistant Professor King.

Education 21. School-Room Activities.—This work will consist in the preparation for and discussion of hand work, constructive work, illustrative work (blackboard and paper, clay, paste, etc., and games). For teachers of the first four grades. S., 8:30-9:30. ——— ———.

Education 22. The Teaching of Geography.—Lectures, discussions, and required readings. This course will deal with the collection of suitable material for teaching geography in the grades and with the organization and method of presentation of this material. Open to seniors and graduates; it may be counted toward the A. B. degree. *First semester,* M., W., 11:30-12:30.

Assistant Professor King.

Education 23. The Teaching of Arithmetic.—Lectures, discussions, and required reading. This course will deal with the theory and practice of teaching arithmetic. *First semester,* S., 8:30-9:30. Assistant Professor King.

Education 24. The Teaching of English.—This course will discuss the teaching of English classics, composition, and grammar in the elementary schools. *Second semester,* S., 8:30-9:30.

Assistant Professor King.

Education 28b. Primary Teaching.—This course is for the purpose of acquainting prospective directors of kindergartens with the subject matter and method of the work done in primary grades, with special attention to the first year. Open to seniors in the Cincinnati Kindergarten Training School. *Second semester,* M., Hour to be arranged. ——— ———.

Education 30. The Teaching of German.—This course consists of instruction, observation and practice teaching, and is intended especially for the teachers of German in the elementary schools. For the conditions under which students may enter this course see Program IV, p. 113. Fifteen hours of practice per semester. M., 9:30-10:30. Supervisor Fick.

Education 32. The Teaching of Art and Hand Work.—The aim of this course is to familiarize those intending to teach in the public schools with the art and hand work pursued in the elementary grades at the present time, and to place before them the best methods for obtaining satisfactory results. This course will embrace work in paper and light cardboard, drawing and painting from plant life and animal life, landscape and still life; analysis of color and design; and picture study both from the art side and its use in connection with language work. This course prepares for the city examination in this subject. *First semester*, S., 8:30-11:30, for twelve weeks. Given at Hughes High School. Supervisor Vogel.

Education 34. The Teaching of Music.—The purpose of the course is to give those who contemplate teaching in the public schools, or are at present teaching, a systematic and comprehensive training in the matter and method of school music. The system followed will be that used in the Cincinnati schools. This course prepares for the city examination in this subject. *Second semester*, S., 8:30-9:30. Given at Hughes High School.

Supervisor Aiken.

Education 36. The Teaching of Physical Training and Hygiene.—This course is for those fitting for positions in elementary schools. It will not be considered sufficient preparation to qualify as a special teacher. The course will include theory and practice of physical exercise, gymnastic games for the school-room and play-ground, school sanitation, and methods of teaching physiology and hygiene in the grades. *Second semester*, S., 10:30-11:30. Given at Hughes High School. Supervisor Ziegler.

Education 38. The Teaching of Penmanship.—This course will present the principles underlying the system of penmanship taught in the Cincinnati public schools, and will show the best methods of teaching it, accompanied by drills for the purpose of securing technique. The course prepares for the city examination in this subject. Given at Hughes High School. *Second semester*, S., 9:30-10:30. Supervisor Steadman.

BIOLOGY

A list of all courses in biology given in the University will be found in the announcement of the McMicken College of Liberal Arts. Only those courses in this department which are of special interest to elementary teachers and to those preparing to teach in elementary schools and kindergartens are scheduled here.

The aim of the instruction is (1) to train teachers how to

observe accurately, and (2) to lead them to a satisfactory point of view from which to direct the observations of children. A laboratory fee of five dollars is charged to cover the expense of material used.

Biology 36. Animal Life.—A course for beginners. Two credits per semester for A. B. S., 8:30-12:30.

Assistant Professor Wieman and Mr. ———.

Omitted in 1912-13.

Biology 37. Plant Life.—A course for beginners. Two credits per semester for A. B. S., 8:30-12:30.

Professor Benedict and Mr. Lantis.

Omitted in 1912-13.

Biology 38. Insect Life.—A course for beginners. Life histories and relationships of insects of importance to man. Field trips and lectures. Two credits per semester. S., 8:30-12:30.

Given in 1912-13. Dr. Braun.

GEOLOGY AND GEOGRAPHY

For a complete list of all the courses offered by the Department of Geology, see the announcement of the McMicken College of Liberal Arts.

1. An introductory study of minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean, followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, T., Th., 2:00-4:30; M., W., 2:00-4:30; and T., Th., 9:30-12:00.

Professor Fenneman and ————.

This course is a prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 110. It must be taken not later than the junior year by those students who expect to enter upon this program during the senior year. It may be taken as late as the senior year by those students who wish to prepare for teaching in elementary schools after graduation from the College of Liberal Arts.

14. General Geology for Teachers.—Elements of dynamic, structural, physiographic, and historical geology. Lectures, S., 8:30-10:30; field or laboratory, 10:30-12:50. Professor Fenneman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure. Lecture, S., 8:30-10:30; field or laboratory, 10:30-12:50.

Assistant Professor Carman.

16. Advanced Physiography of the United States.—Course 1 or 14 and Course 9 are prerequisite. Lecture, M., 4:00-6:00; W., 4:00-5:00.

Professor Fenneman.

HISTORY

The following course in history is prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 110 for all students who have not had a year's course in American history in high school. Those students who wish to complete this program during the senior year should take this course in history not later than the junior year. If the student wishes to defer preparation for teaching in the elementary schools till after receiving the A. B. degree, this course may be taken as late as the senior year.

For a complete list of all the courses offered in the Department of History, see the announcement of the McMicken College of Liberal Arts.

History 15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. The work covers the period from the earliest discoveries to the present time, and is based largely upon a text-book, supplemented by regular reports and occasional lectures. M., W., F., 8:30-9:30.

Associate Professor Cox.

PHILOSOPHY

For a complete list of all the courses offered by the Department of Philosophy, see announcement of the McMicken College of Liberal Arts.

5a. Ethics.—An introduction to the theory of morals. The course includes, beside the theory of morality, discussion of selected problems of present moral experience. Open to students who have completed two years of work in the University. *First semester,* M., W., F., 10:30-11:30. Professor Tawney.

This course is prerequisite to entrance upon professional programs, I, II, III, and IV, outlined on pp. 110-114. It should be taken in the junior year by those who pursue a professional program during the senior year. It may be taken in the senior year by those who expect to pursue a professional program after graduation from the College of Liberal Arts.

12. The History of Philosophy.—In the fall of 1912 this course will begin with the philosophy of the Middle Ages, it being part of a cycle of courses dealing with the history of philosophy. One hour throughout the year. S., 9:30-10:30. Professor Tawney.

PSYCHOLOGY

For a complete list of all courses offered by the Department of Psychology, see the announcement of the McMicken College of Liberal Arts.

Psychology 1a. Introductory Psychology.—An analytical study of mental phenomena, with special reference to accurate observation and description. A general account of the subject matter of psychology. *First semester,* M., W., F., 11:30-12:30.

Professor Breese.

Psychology 1b. Section II. Educational Psychology. The application of the principles of psychology to education. *Second semester,* M., W., F., 2:00-3:00. Professor Breese.

Courses 1a and 1b are prerequisite to entrance upon the study of education, as indicated in professional programs for teachers outlined on pp. 110-114. Those who wish to pursue one of these programs should take these courses in psychology not later than the junior year. Those who wish to qualify for a teacher's diploma after graduation from the College of Liberal Arts may take these prerequisite courses in psychology during the senior year.

Psychology 6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Hours to be arranged.

Professor Breese.

Psychology 5. Elements of Psychology.—A general account of the facts of mental life and their application to education. S., 11:30-12:30. Professor Breese.

For Teachers.

Psychology 7b. Elements of Psychology.—Open to students of the Cincinnati Kindergarten Training School and to those in the Course for Teachers of Art who are not candidates for a degree. *Second semester,* M., W., F., 3:00-4:00. Professor Breese.

Psychology 8. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.

Professor Breese.

KINDERGARTEN TRAINING

The following courses in Kindergarten Training, not given at the University, may be taken at the Cincinnati Kindergarten Training School. The school is located at No. 6 Linton street, Vernonville. Registration day, Thursday, September 19, 1912. Work begins on Friday, September 20.

For conditions governing college students who are fitting primarily for positions in kindergartens, see Program III, page 113.

The Cincinnati Kindergarten Training School issues a special announcement giving full information, a copy of which may be had upon application to the Registrar at the above address.

COURSES

Kgtn. 1. Gifts.—This course has for its aim a thorough knowledge of the kindergarten material, a comparative study of typical and original plays or lessons with the gifts, and a study of Froebel's underlying principles. Juniors. *First semester,* Th., 9:00-11:00. *Second semester,* two hours, to be arranged. Three credits. Miss Stone.

Kgtn. 2. Handwork.—This course includes both the old and new occupations with practice in each. Also the preparation of simple courses adapted for use in the kindergarten. Juniors. *First semester,* T., 10:00-12:00. Seniors. *Second semester,* T., 10:00-12:00. Four credits. Miss Stone and Special Teachers.

Kgtn. 3. Rhythms, Songs, and Games.—Juniors and seniors. T., 3:00-4:00, throughout the year. Three credits. Miss Fry.

Each of these courses includes theory and practice, and is intended to develop resourcefulness and originality in the student, as well as to give technical mastery of kindergarten instrumentalities.

Kgtn. 4. Theory.—This course includes an introductory study of Froebel's Mother Play as the basis for story, song, and game in kindergarten teaching. Also the study of Froebel's writings, for the purpose of discovering the educational laws which form the foundation for child development and personal culture. Juniors, one hour, throughout the year. Seniors, two hours, throughout the year. Six credits. Miss Stone, Miss Fry.

Kgtn. 5. Stories.—This course includes lectures, discussions, and reference work concerning the literature of childhood, together with regular practice in the telling of stories. Juniors and seniors. Throughout the year; hour to be arranged. One credit. Miss Simrall.

Kgtn. 6. Program Construction.—A critical resumé of every division of kindergarten work and the educational principles involved. The careful planning of programs for definite periods of time and for meeting different conditions. Seniors. W., 2:00-4:00. Four credits. Miss Bothwell.

Kgtn. 7. Observation.—Carefully supervised observation of the entire morning's work in kindergarten, followed by a discussion of the various activities and the educational principles in-

volved. Juniors. *First semester,* hours to be arranged. Two credits. Miss Stone, Miss Fry.

Kgtn. 8. Practice Teaching.—A minimum of one-half year (days to conform to the public school calendar) in private, mission, or public school kindergartens, under at least two directors. Opportunity for increasing responsibility under careful supervision. Additional practice may be required to demonstrate the student's ability to satisfactorily conduct every phase of kindergarten work. Juniors and seniors. Ten credits.

Miss Stone, Miss Fry.

Kgtn. 9. Organization of Mothers' Meetings.—A series of lectures covering the essentials of parliamentary law and the general purpose and subject matter of mothers' meetings. Short talks suitable for different occasions are prepared and given by the students. Seniors. *Second semester.* Two hours, to be arranged. Two credits. Miss Laws and Miss Stone.

Kgtn. 10. Art.—Rapid sketching on blackboard; brush work in ink and water color; decorative design. Art in kindergarten—decoration, pictures, and children's work. Seniors. Hours to be arranged. One credit. Mr. John J. Thompson.

Kgtn. 11. Music.—Study and criticism of kindergarten music, the child's voice, rhythm, and development of ear and tone. Attention to instrumental music with each student. Juniors and seniors. *Second semester,* T., 1:30-2:30. One credit.

Supervisor Aiken.

Kgtn. 12. Hygiene and Physical Training.—This course includes lectures by specialists in each of these lines as well as class work in Physical Training. Its aim is to afford knowledge of sanitation, food, dress, exercise, rest, children's diseases, and emergencies. To give ease and grace of movement, a wise conservation and use of energy, and to correlate with games played in the kindergarten such movements as are essential to the child's general development. Juniors and seniors. Throughout the year, hours to be arranged. One credit each year.

Kgtn. 13. Directors' Conference.—Lectures, discussions, suggestions in program work.

Occasional talks by prominent kindergartners and specialists in education from other cities. M., 2:00-4:00, throughout the year.

Miss Bothwell.

COURSES FOR TEACHERS OF ART

The purpose of this course is to prepare students for positions as teachers of art or supervisors of art instruction in public or private schools.

Admission presupposes (a) the satisfactory completion of an approved curriculum in a secondary school, and (b) an amount of work in art of approved quality equivalent to that represented by two years of study in the Art Academy of Cincinnati. It is understood, however, that all students are admitted upon a month's probation during which they must give satisfactory evidence of a high degree of capability in art and show that they are otherwise qualified to pursue the course.

The course is two years in length, during which the student's time is divided about equally between the professional program of the College for Teachers and studies in art at the Art Academy of Cincinnati. The satisfactory completion of the course leads to graduation and a diploma certifying that the holder is qualified to teach art or supervise art instruction in public or private elementary, secondary, and normal schools.

To students seeking a teacher's training course in art, Cincinnati offers exceptional opportunities. The Art Academy is a thoroughly equipped school for the training of artists. Adjacent to it is the Cincinnati Museum, containing large collections of paintings and sculpture, as well as of the applied arts. Each month, also, special exhibits of contemporary interest are arranged. The reference library of the Museum, relating especially to art, the Public Library, and the University Library are also avaliable. In the University various lectures are open to students. For studies in natural history students have access to the Museum of the Society of Natural History, and the Cincinnati Zoological Garden. Among the local art industries the Rookwood Pottery is of especial interest.

The work of observation and practice teaching is done in the regular public elementary and high schools of Cincinnati. This phase of the course, therefore, is conducted under the ideal conditions necessary to give the student a truly professional preparation. In connection with this practice are wrought out lesson-plans and outlines of work for the various grades of the elementary and high schools, in harmony with the requirements of a well graded course of study based upon modern educational principles. In this way the ability of students to organize a progressive course in art instruction is thoroughly tested.

For fees in the course for teachers of art see p. 25.

COURSES

The following courses of instruction, when not otherwise specified, are given at Hughes High School.

First year students will take Courses 2, 3, 4, and 5 or 9. They will spend the forenoon of each week-day, excepting Saturday, in work at the Art Academy. They will also take Education 13, the first semester, and Psychology 7b, the second semester, at the University. (See pp. 117, 122.)

Second year students will take Courses 1, 6, 7, 8, and 5 or 9. On forenoons and afternoons, when not occupied with these courses they will continue work at the Art Academy. At the University they will take Education 6. (See p. 117.)

Art 1. Theory and Practice of Teaching Art.—Principles upon which art teaching is based. The function of art in general education. Consideration of courses of study. Making of lesson plans and outlines of work for elementary and secondary schools. Principles of criticism. Discussion of methods and devices. F., 1:00-3:00. Miss Hyde.

Art 2. Water Colors and Crayons.—Landscape, nature products, pose and still life. Practice in arrangement of still life studies for the sake of good composition and harmony of color. Tu., 1:00-4:00. Miss Hyde.

Art 3. Art Design and Applications.—Study of the principles of balance, rhythm and harmony, in line, dark and light, and color. Fitness of design in form, tone and color, in relation to various applications. Design applied to embroidery, stenciling, weaving, basketry, metal and leather work. W., 1:00-3:00. Mr. Teal.

Art 4. Art Construction and Clay Work.—Paper and cardboard construction. Weaving, stenciling, book binding, block printing, metal and leather work, basketry, pottery, and knife work. Th., 1:00-3:00. Miss Hyde.

Art 5. Pictorial Composition.—Critical study of landscape composition in black and white, in tones of middle gray, and in color. Figure compositions in color. Illustrated talks on the old masters and comparisons of their work with modern art. Instruction in blackboard illustration suited to the needs of teachers of regular subjects in elementary and secondary schools. Given in alternate years. M., 1:30-4:00. Mr. Teal.

Art 6. Design and Classic Ornament.—An advanced study of questions taken up in Art 3. Study of historic ornament. Adap-

tation of nature forms in design. Influence of materials on design. Theory of color. Designing of interiors with the study of original color schemes. W., 1:30-4:00. Miss Hyde.

Art 7. Observation and Practice Teaching.—Two half-days per week in the public elementary and secondary schools under critical supervision. Webster Public School on Th., 8:30-12:00, Miss Swing, critic. Hughes High School, forenoons, Miss Hyde, critic.

Art 8. History of Art.—A study and amplification of Reinach's Apollo with the aid of photographs and plates in the Cincinnati Art Museum Library. Students required to make notes, outlines, and chronological tables. Instruction and practice as guides of visitors to the Art Museum. At the Art Museum. Tu., 2:00-4:00. Miss Kellogg.

Art 9. Mechanical Drawing.—Use and care of materials and instruments. Simple geometric problems. Lettering. Scale drawing. Isometric and orthographic projections. Intersections. Machine drawings. House plans and elevations. Tracing and blue printing. Given in alternate years in place of Art 5. M., 1:30-4:00. Supervisor Vogel.

Omitted in 1912-13.

UNIVERSITY OF ILLINOIS

PRESIDENT'S OFFICE

UNIVERSITY OF ILLINOIS LIBRARY

JUN 9 - 1915

UNIVERSITY OF CINCINNATI RECORD

SERIES I MARCH, 1913 VOL. IX, NO. 5

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1913-1914

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

UNIVERSITY OF ILLINOIS LIBRARY

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TABLE OF CONTENTS

PART I

GENERAL STATEMENT

Calendar, ... 7
Departments of the University, ... 8
Administrative Officers, ... 9
General Information:
Foundation, ... 10
Buildings and Site, ... 12
Benefactors of the University, ... 13
Endowment Fund Association, ... 13
Benefactions, ... 13
University Library, ... 14
Publications, ... 16
Museums, ... 16
Fellowships, Scholarships, and Prizes, ... 17
Alliance Française, ... 19
Athletics, ... 20
Carson Field, ... 20
Physical Training for Women, ... 20
Student Organizations, ... 21
Admission:
Special Students, ... 21
Students Entering from Other Colleges and Universities, 21
Admission to Advanced Standing, ... 22
Registration, ... 22
General Regulations, ... 23
Fees:
Tuition, ... 24
Special and Irregular Students, ... 25
External Courses, ... 25
Special Courses for Teachers, ... 25
Laboratory Fees, ... 25
Graduation Fees, ... 26
Breakage Deposits, ... 26
Course for Teachers of Art, ... 26
Miscellaneous Fees, ... 26
Expenses, ... 27

PART II

THE GRADUATE SCHOOL

Faculty, ... 28
Admission, ... 29
Instruction, ... 29
Requirements for the Degree of Master of Arts, ... 30

Requirements for the Degree of Doctor of Philosophy, . . 30
Admission to Advanced Standing, ... 31
Special Arrangement for Graduate Students in Lane Seminary and in the Hebrew Union College 32
Fellowships and Scholarships, ... 32
Courses of Instruction:
Anatomy, ... 32
Astronomy, ... 32
Biology, ... 32
Chemistry, ... 33
Economics, ... 34
Education, ... 34
English, ... 35
Geology and Geography, ... 35
German, ... 35
Greek, ... 36
History, ... 36
Latin, ... 36
Mathematics, ... 36
Mathematics (Applied), ... 37
Pathology and Bacteriology, ... 38
Philosophy, ... 38
Physics, ... 38
Physiology, ... 38
Political and Social Science, ... 38
Psychology, ... 38
Romance Languages, ... 39

PART III

McMICKEN COLLEGE OF LIBERAL ARTS

Faculty, ... 40
Requirements for Admission, ... 42
Entrance Conditions, ... 43
Entrance Examinations, ... 43
Schedule of Entrance Examinations, ... 43
Definition of Units in Subjects Required for Entrance:
English, ... 44
Latin, ... 46
Greek, French, ... 47
German, ... 49
Spanish, ... 50
Mathematics, ... 51
Physics, ... 52
Chemistry, ... 53
Zoology, ... 54
Botany, ... 55
Botany and Zoology, ... 55
Physical Geography, Astronomy, ... 56
History, Civics, Drawing, ... 57
Manual Training, Domestic Science, ... 58

Admission on Certificate from Accredited Schools, ... 58
List of Accredited Schools, ... 59–60
List of Recognized Schools, ... 61
Accredited Schools of the North Central Association, . . 61
Requirements for the Bachelor of Arts Degree, ... 61
Election of Studies, ... 63
Special Arrangements:
Credit for Work Done in the College of Law, ... 63
Seven-Year Combined Collegiate and Medical Course, . . 64
Six-Year Combined Collegiate and Medical Course, . . . 64
Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary, ... 64
Credit for Work Done in the Art Academy of Cincinnati, 64
Credit for Work Done in the College for Teachers, . . . 64
Courses of Instruction:
Astronomy, ... 65
Biblical Literature, ... 65
Biology, ... 66
Chemistry, ... 72
Economics, ... 77
Education, ... 79
English 80
Geology and Geography, ... 85
German, ... 87
Greek, ... 90
History, ... 92
Latin, ... 95
Mathematics, ... 96
Philosophy, ... 99
Physical Education, ... 101
Physics, ... 102
Political and Social Science:
Political Science, ... 105
Social Science, ... 106
Psychology, ... 108
Romance Languages, ... 109
Six-Year Combined Collegiate and Medical Course, . . . 113
Seven-Year Combined Collegiate and Medical Course. . . . 114
Drawing, Modeling, and Carving, ... 115

PART IV

COLLEGE FOR TEACHERS

Committee in Charge, ... 117
Faculty and Instructors, ... 117
General Statement, ... 118
General Regulations:
Program I, ... 118
Program II, ... 120
Program III, ... 121
Program IV, ... 122
Program V, ... 123
Program VI, ... 123

Special Courses for Teachers, ... 123
Requirements of the Cincinnati Board of Education, . . . 123
Appointment Committee, ... 124
Courses of Instruction:
Education, ... 124
Biology, ... 128
Geology and Geography, ... 128
History, ... 129
Philosophy, ... 129
Psychology, ... 130
Courses in Kindergarten Training, ... 131
Courses for Teachers of Art, ... 133
Schedule of Lectures, First Semester, 1913-14, ... 136

CALENDAR

1913

Sept. 15, Monday.	Entrance examinations begin.
Sept. 18, Thursday. Sept. 19, Friday. Sept. 20, Saturday.	Registration days for the College of Liberal Arts and the College for Teachers.
Sept. 20, Saturday.	Entrance examinations end.
Sept. 22, Monday.	First semester begins for the College of Liberal Arts and the College for Teachers.
Sept. 22, Monday.	First registration day for the Graduate School.
Sept. 27, Saturday.	Last registration day for the Graduate School.
Nov. 27, Thursday.	Thanksgiving Day: a holiday. Recess of three days.

Recess from December 22, 1913, to January 3, 1914, Inclusive.

1914

Jan. 5, Monday.	Classes resumed. Entrance examinations begin.
Jan. 10, Saturday.	Entrance examinations end.
Jan. 26, Monday.	First semester examinations begin.
Feb. 5, Thursday.	First semester examinations end.
Feb. 6, Friday.	Registration day for the second semester of the College of Liberal Arts and of the College for Teachers.
Feb. 7, Saturday.	No classes.
Feb. 9, Monday.	Second semester of the College of Liberal Arts and the College for Teachers begins.
Feb. 9, Monday. Feb. 10, Tuesday. Feb. 11, Wednesday.	Registration days for the second semester of the Graduate School.
May 1, Friday.	Oratorical contest for Jones Prizes.
May 30, Saturday.	Memorial day: a holiday.
June 12, Friday.	Second semester ends.
June 13, Saturday.	University Commencement Day.
June 15, Monday.	Entrance examinations begin.
June 20, Saturday.	Entrance examinations end.

DEPARTMENTS OF THE UNIVERSITY

The University comprises the following departments:

GRADUATE SCHOOL,

McMICKEN COLLEGE OF LIBERAL ARTS,

COLLEGE FOR TEACHERS,

COLLEGE OF ENGINEERING: Departments of Chemical, Civil, Electrical, Mechanical, and Metallurgical Engineering,

COLLEGE OF MEDICINE (The Ohio-Miami Medical College and the Clinical and Pathological School of the Cincinnati Hospital),

COLLEGE OF COMMERCE.

For special announcements of the various departments and for further information, address:

THE SECRETARY OF THE UNIVERSITY
CINCINNATI, OHIO

ADMINISTRATIVE OFFICERS

OF

THE GRADUATE SCHOOL, THE COLLEGE OF LIBERAL ARTS, AND THE COLLEGE FOR TEACHERS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.
Office, 10 McMicken Hall.

LOUIS T. MORE, Ph. D., . . Dean of the College of Liberal Arts.
Office, 8 McMicken Hall,

JOSEPH E. HARRY, Ph. D., ... Dean of the Graduate School.
Office, 4 McMicken Hall.

WILLIAM P. BURRIS, A. M., L. H. D., Dean of the College for Teachers.
Office, 2 McMicken Hall,

FREDERICK C. HICKS, Ph. D., Dean of the College of Commerce and Supervisor of the Evening Academic Courses.
Office, 33 McMicken Hall.

EMILIE WATTS MCVEA, A. M., ... Dean of Women.
Office, 12 McMicken Hall.

JERMAIN G. PORTER, Ph. D., ... Director of the Observatory.
The Observatory, Mt. Lookout.

HENRY S. WEST, Ph. D., ... Director of School Affiliation.
Office, 2 McMicken Hall.

EDWIN W. GLOVER, ... Director of Music.

ALFRED BRODBECK, ... Director of Physical Education.
Gymnasium Building.

DANIEL LAURENCE, B. S., ... Secretary of the University.
Office, 5 McMicken Hall.

CHARLES ALBERT READ, A. B., Librarian of the University Library.
Van Wormer Library Building.

LELIA AMANDA GARVIN, B. L., ... Registrar.
Office, 7 McMicken Hall.

GENERAL INFORMATION

FOUNDATION

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869, the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile, an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874, the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At

length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati. Then, in 1910, the friends of Dr. Joseph Eichberg, for many years an eminent Professor of Physiology in the Miami Medical College, who lost his life through a lamentable accident in the summer of 1908, presented the University with the sum of $45,000, to establish in the University the Joseph Eichberg Chair of Physiology. In 1911, Dr. Francis Brunning bequeathed his entire estate, with the exception of a few minor bequests, to the Endowment Fund Association of the University of Cincinnati, for the College of Medicine. This estate is expected to yield from $80,000 to $100,000. In 1912, Mrs. Floris A. Sackett and Mrs. Frances W. Gibson made bequests to the University, the exact value of which has not yet been determined.

In 1912, Mr. Harry Levy presented to the Board of Directors of the University of Cincinnati for the Endowment Fund of the College of Medicine, the sum of $50,000, to be known as "The Julie Fries Levy Endowment." Mr. Levy made this gift in honor of his mother and wishes the income used in furthering and disseminating medical knowledge.

New departments were also added. In 1872, the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896, the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908, an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati."

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was

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* For this purpose the city levies annually a special tax of one-twentieth of one mill.

organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the City of Cincinnati. In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected. In the same year the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as before. In 1912 the College of Commerce was organized for the purpose of providing opportunity for higher commercial education.

BUILDINGS AND SITE

From 1875 to 1895, the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96, the north wing, known as Hanna Hall, was built for the Departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the Departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. In 1912 this building was enlarged by the addition of a lecture room, a library, and another small dome. Since 1896, the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. A gymnasium, power plant, and engineering building, provided by the city, at a cost of $550,000, were completed in December, 1911.

A chemical laboratory and a woman's building are now under construction, and extensive improvements, including a dining hall and study rooms for men, are being made in McMicken Hall.

BENEFACTORS OF THE UNIVERSITY

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Proctor, Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Moses F. Wilson, Eugene F. Bliss, James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Chas. Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, Edward Miles Brown, Nathaniel Pendleton Dandridge, Mrs. Howard Breen, Robert William Hochstetter, Mrs. R. N. Hollingshed, Davis L. James, Catherine M. James, Ellen W. James, Annie A. James, Mr. and Mrs. O. J. Renner, Mrs. Antonia Wendte, Mary E. Dandridge, Mrs. Joseph Eichberg, the alumni of the University, and others.

ENDOWMENT FUND ASSOCIATION

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

FORM OF BEQUEST TO THE UNIVERSITY OF CINCINNATI:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

FORM OF BEQUEST TO THE ENDOWMENT FUND ASSOCIATION:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the Fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any question relating to foundation to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The library is open every week day from 8 A. M. to 9:30 P. M.

The University Library, in this building, contains about 66,000 volumes and 10,000 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The library is provided with a card catalogue of its own books, and also with card catalogues of the books (non-fiction) received since 1905, by the Public Library of Cincinnati.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by his son, Mr. Theodore A. Bruehl.

The Wilson Library, consisting of works of English, French, and Italian literature, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts, and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown, was presented to the University by Mrs. Edward Miles Brown. It consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, at present about 900 volumes, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The library has many volumes on history and economics, purchased from the proceeds of an endowment provided in 1894 by the will of Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has rooms for its valuable collections of books, pamphlets, and other articles in the Van Wormer Library. This collection comprises over 25,000 volumes and 69,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts. Students of the University have access to this library and may withdraw books from it under certain conditions.

The total number of books, including duplicates, in the Van Wormer Library Building is about 96,600 volumes and 79,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	3,500 volumes
The Library of the College of Medicine	3,000 volumes
Total	6,500 volumes

The libraries of the University, excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 72,500 volumes and 10,000 pamphlets.

The Public Library, 425,005 volumes; the Mercantile Library, containing about 82,060 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum and the College of Music, are open to University students.

PUBLICATIONS

The official publications of the University are as follows:

The University Record. This publication is issued at intervals during the year and comprises the President's Annual Report, the Annual Catalogue, and Announcements of the Graduate School, College of Liberal Arts, College for Teachers, College of Engineering, College of Medicine, and College of Commerce.

The University Studies. This publication contains the results of research by members of the faculty or by other persons connected with the University of Cincinnati. A price list of the different numbers of this publication may be obtained by addressing the office of the Press.

Student publications of the University are as follows:

The Cincinnatian. The Cincinnatian is the University Annual, and is edited and published by the members of the Junior Class.

The University Weekly News. This paper is the official student bulletin, and is issued every week during the University year by a student board of editors.

MUSEUMS

The Museum of Natural History consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous

rocks; the Wetherby collection of rocks and minerals; and lastly, a series of specimens illustrating the chemical industries. The Department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks, and fossils. Among recent valuable additions are the U. P. James collection of fossils and minerals, the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch I. Carson; and several group mounts of large animals by the custodian of the Museum.

In 1912 the heirs of the late Samuel A. Miller loaned to the University his large collection of fossils (more than 8,000 labels), gathered from various parts of America and Europe. In return for the use of this collection for educational purposes, the University has provided for its exhibition in specially adapted show-cases in a large well-lighted room devoted especially to that purpose. The collection is for sale, and it is earnestly hoped that some friend may purchase it for this institution. The University has also on loan and similarly exhibited the H. M. Morris collection of Indian implements.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of the "Winged Victory," "Aphrodite of Melos," "Faun Playing the Flute," "Esquiline Venus," "Capitoline Venus," and a pediment of the temple of Zeus at Olympia. Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, Corinth, and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

THE GRADUATE SCHOOL

The D. A. R. Fellowship in American History. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

The Hanna Fellowship in Physics. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

The Alliance Française Scholarship, of $300, was established in 1904 by the Alliance Française of the City of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

The Armstrong-Hunter Memorial Fund, valued at $1,000, was established in 1910 in memory of Miss Sarah J. Armstrong and Miss

Clara Hunter, by eighty of their former pupils. This fund will be used to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

In addition to the above, the University offers ten scholarships in several departments which exempt their holders from the payment of tuition fees.

THE McMICKEN COLLEGE OF LIBERAL ARTS

THE CORNELIUS GEORGE COMEGYS SCHOLARSHIP, with an income of fifty dollars, was founded in 1899 by the Old Endowment Fund Association, which was composed of the alumni of the University. This scholarship is awarded annually to a meritorious undergraduate.

THE McMICKEN HONORARY SCHOLARSHIPS are awarded annually to the five Juniors who have the best scholastic standing, according to the records in the Registrar's office.

THE THOMS HONORARY SCHOLARSHIPS are awarded annually to the six Sophomores and the six Freshmen who have the best scholastic records.

THE JULIUS FLEISCHMANN SCHOLARSHIPS. Thirteen scholarships of $75 each, offered for the years 1909-10, 1910-11, 1911-12, 1912-13, by ex-Mayor Julius Fleischmann. They cover the first year's tuition, in the College of Liberal Arts, of thirteen non-residents, who are members of the graduating classes of the accredited schools outside of Cincinnati.

THE OPTIMIST CLUB SCHOLARSHIPS. Two scholarships of $75 each, offered in 1910, for four succeeding years, by a resident of Cincinnati who wished his identity to remain unknown. According to the wishes of the donor, these scholarships will be awarded in the College of Liberal Arts to non-resident students who have attended the University for at least one year and need assistance.

THE JONES PRIZES. The first Jones Prize of forty dollars was founded in 1892 by the Honorable Frank J. Jones, and is awarded annually to that member of the senior class in the College of Liberal Arts who writes and pronounces the best English oration. The subjects are chosen by the Dean and the Chairman of the Board of Directors. A committee consisting of three citizens of Cincinnati is appointed by the Chairman of the Board of Directors to judge the contest. The second Jones Prize of twenty dollars was founded by Mr. Jones in 1901. It is awarded to that member of the senior class whose oration is judged by the committee to be second in merit. These prizes are permanently endowed.

THE EDWARD MILES BROWN PRIZE FOR EXCELLENCE IN ENGLISH. This prize of fifty dollars was established in 1908, by a provision of

the will of the late Professor Edward Miles Brown. It is awarded annually to that member of the senior class who has attained the highest excellence in English during his four years' undergraduate course.

THE HENRY HOCHSTETTER PRIZE IN CHEMISTRY. This prize was established in 1909 by Mr. Robert Hochstetter, of the Class of 1895, in memory of his brother, Henry Hochstetter. It is to be awarded annually for the best graduating thesis in Chemistry, and is open to both students of Liberal Arts and Engineering. The successful candidate is nominated by a committee consisting of the head of the Department of Chemistry and two members of the Cincinnati Section of the American Chemical Society.

THE ROBERT PATTERSON MCKIBBIN MEMORIAL PRIZE, a gold medal of the value of twenty-five dollars, was established in 1911 by the Reverend William McKibbin and family, in memory of their son Robert Patterson McKibbin, who died in 1910, while a member of the junior class of this University. This prize aims to hold up before the male students of the University the ideals of manhood. It will be awarded to that young man of the senior class who, in the judgment of the faculty, is the best embodiment of these ideals.

THE UNION BETHEL SCHOLARSHIPS IN SOCIAL SCIENCE. Three scholarships of $75 each, offered for the year 1912-13, by Mr. J. O. White, resident director of the Union Bethel Settlement. These scholarships are awarded to three advanced students in the Department of Social Science who will carry on sociological investigations at the Union Bethel.

THE JEWISH SETTLEMENT SCHOLARSHIP IN SOCIAL SCIENCE. This scholarship of $75 was offered for the year 1912-13 by the Jewish Settlement, with the understanding that it be awarded to an advanced student in the Department of Social Science who will carry on sociological investigations at the Settlement.

For the fellowships, scholarships, and prizes of the various colleges, consult their several announcements.

THE ALLIANCE FRANÇAISE

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students of the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of three hundred dollars in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

ATHLETICS

Athletics are so controlled in the University that they play an important part in the college life of the student without seriously interfering with his interest in class-room work.

All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: three hours per week for all members of the Freshman class, and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A large part of the work is done out of doors during good weather, and such games as football, baseball, basket ball, tennis and track athletics are a part of the students' training. Lessons in boxing, wrestling, and fencing are also given to students interested in this form of exercise.

All athletics and gymnastics are in charge of the Director of Physical Education and his assistants.

CARSON FIELD

An Athletic Field has recently been provided, which is one of the best college athletic fields in the country. It contains a baseball diamond, a football gridiron, and a quarter-mile cinder track, with a one hundred and twenty-four straight-away extending in front of the new grand stand. The proximity of this field to the gymnasium makes it a particularly valuable addition to the athletic equipment of the University. Its location between three hilltops, which form a natural amphitheater, affords opportunity for thousands of people to view the games.

The new gymnasium with its modern equipment—cork-covered running track, white-tiled swimming pool, and spacious locker rooms—is the most complete institution of its kind in the West.

PHYSICAL TRAINING FOR WOMEN

A special instructor has charge of the work in Physical Training for young women, which is required during the Freshman and Sophomore years. The work in the gymnasium is supplemented during the fall and spring with outdoors games.

STUDENT ORGANIZATIONS

The following student organizations met regularly throughout the academic year, 1912-13:

The Academic Club, composed of the men of the College of Liberal Arts; Blue Hydra, a permanent organization devoted to the study of Biology; The Chemical Journal Club; The Chemist's Club; The Co-op Club; The Debating Council; The French Club; The German Club; The History Club; The Literary Society; Men's Glee and Mandolin Clubs; The Speaker's Club, an oratorical and debating society composed entirely of young men; The Student Section of the American Society of Mechanical Engineers; The Student Section of the American Institute of Electrical Engineers; The University Club, composed of representatives from the student clubs, the fraternities, and the four classes; Women's Glee Club; A chapter of the Y. W. C. A.

The Woman Student's League is an organization open to all women students of the University and to the women of the faculty. Regular meetings are held, at which lecturers of note address the members on subjects connected with the general and economic interests of women.

A Student Tribunal for Self-Government exists in the College of Engineering. It consists of five members—three Seniors and two Juniors.

Membership in the Three Arts Club of Cincinnati is open to women students in the College of Liberal Arts.

ADMISSION

Special Students.—Persons at least twenty years of age and qualified to do University work may be admitted as special students to lectures and laboratory courses in the College of Liberal Arts and in the College for Teachers. They will be required to furnish documentary evidence to the Director of School Affiliation, and to satisfy the heads of the departments concerned, of their ability to carry on successfully the courses which they desire to enter.

Before any special student may become a candidate for a degree he must satisfy the entrance requirements. All special students are amenable to the same regulations as apply to regular students in matters of examination, probation, discipline, etc.

Students Entering from Other Colleges and Universities.—An undergraduate of a college or university desiring to enter the McMicken College of Liberal Arts or the College for Teachers must present to the Director of School Affiliation satisfactory evidence that he has done a sufficient amount of preparatory work to

meet the regular entrance requirements, together with a certificate of honorable dismissal from the college or university last attended. He will be given credit for work of university grade in accordance with the provision for "Admission to Advanced Standing."

Admission to Advanced Standing.—Students may be admitted to advanced standing upon presentation of a certificate from a college of approved standing. All applications for advanced standing must be made within three weeks after matriculation to the Director of School Affiliation, and must be accompanied by a statement of the work done, signed by the proper officials of the college from which the applicant comes, and by a marked copy of the catalogue or by a written description in detail of the courses for which advanced credits are desired. In courses where note books or drawings or both are required, these also must be presented. The students applying for advanced standing must first have satisfied the entrance requirements the same as regular students.

REGISTRATION

New students will register in 1913 on Thursday and Friday, September 18 and 19; upper classmen on Saturday, September 20. In 1914 they should register on Friday, February 6. Students registering on any other days than those designated above will be required to pay a registration fee of one dollar.

No person will be admitted to any course after the beginning of the semester, unless a good and sufficient excuse for not entering at the opening of the semester be presented to the Dean; and *in no event will any person be permitted to enter the work of any semester after the close of the third week of that semester.* In accordance with this regulation no person will be admitted to the work of the first semester of 1913-14 after October 11, 1913; for the second semester, the last day of admission will be February 28, 1914.

New Students.—A student shall (1) take to the Advisory Committee for Freshmen the Certificate of Admission received from the Director of School Affiliation and, after consultation, fill out the Course Card received from the Committee; (2) take the Certificate of Admission and the Course Card to the Registrar; (3) pay the library fee (also tuition and laboratory fees when such are required) to the Clerk of the Board; (4) get a receipt for matriculation from the Clerk of the Board; (5) file the Course Card received from the Advisory Committee in a box prepared for that purpose in the Registrar's office.

Upper Classmen should fill out the registration blank and present it to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk. After

paying the library fee (also tuition and laboratory fees, when such are necessary), upper classmen should take the clerk's receipts to their respective Deans, and receive their Course and Schedule Cards. The young men will obtain these cards from the Dean of the College of Liberal Arts, and the young women from the Dean of Women.

On the Course Card each course must be designated by the department and the number of the course, especial title, and the number of hours' credit, e. g.:

English 1: Rhetoric and Composition..... 3
Mathematics 1: Algebra, Trigonometry, and
Analytical Geometry 4

In filling out election blanks especial care should be taken to note the advertised hours of courses, in order that conflicts may be avoided.

All students who expect to become teachers should confer with the Dean of the College for Teachers before filling out their Course Cards.

No change will be permitted on the Course Card after the expiration of three days from the last day of registration.

All Course and Schedule Cards must be filled out and deposited in the boxes provided for that purpose before four o'clock on the last registration day.

GENERAL REGULATIONS

Each student shall, at the beginning of the year, leave his local address at the office of the Registrar and shall promptly report all subsequent changes of address.

Unit of Instruction.—The unit of instruction is one hour per week for one semester. Two and one-half hours of actual work in the laboratory, shop, or drafting-room, are considered equivalent to one recitation hour and the preparation therefor. Credit will be given for the number of hours officially published with the course, and for no more. University work not regularly registered is forbidden.

Absences in the College of Liberal Arts.—All absences of students, from any cause whatsoever, are recorded in the Registrar's office. If thirty or more absences are recorded against a student, two extra credits must be made in order to obtain the A. B. degree. No absences are excusable except those incurred by students representing the University in some public exercise outside of the city. Application for these excuses must be made to the Dean in advance.

Probation.—A student in the College of Liberal Arts who receives a grade below D in one-half of his work at the mid-term,

or at the end of any semester, shall be put upon probation for the next half semester of college work. Such a student, if similarly delinquent at the end of his probation, shall cease to be a member of the University.

If it shall be necessary to place a student upon probation a second time, after an interval has elapsed since the first time, it shall be within the power of the Dean to dismiss the student the moment his grades fall below D in one-half of his work.

GRADES.—The scale of marks for recording grades is as follows: A, 90-100; B, 80-89; C, 70-79; D, 60-69, passed; F. 50-59, conditioned; F, 0-49, failed.

In case a student withdraws from the University during any semester, credit will not be given for any of the work elected for that semester.

HONORABLE DISMISSAL.—It is required as a condition of honorable dismissal, that every student who wishes to withdraw from the University shall submit to the Registrar a written request to that effect.

A copy of the "Rules for the Guidance of Students" may be obtained at the Registrar's office.

FEES

Tuition in the Graduate School, the College of Liberal Arts, and the College for Teachers is free to regular students who are residents of Cincinnati.

All fees must be paid *in advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Dean is authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

TUITION FEES

All regular non-resident students in the College of Liberal Arts and in the College for Teachers, are charged a tuition fee of $75.00 per year, payable in installments of $37.50 per semester. If not paid during registration days, but if paid within the two weeks succeeding the last registration day, the fee is $45.00 per semester. If not paid as above, but if paid within the following two weeks, the fee is $50.00 per semester. If not paid within four weeks after the last registration day, further attendance upon classes will be refused.

Students in the College of Liberal Arts who are residents of the city of Cincinnati, and elect any work whatsoever in the College of Engineering, are charged the full tuition fee of $37.50 per semester.

Tuition in the University Evening Courses is free (a) to all residents of Cincinnati; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year. Non-residents, other than teachers, are charged tuition at the rate of $3.00 per credit hour per semester. A credit hour is one hour's work a week carried through a semester or half year. Laboratory fees will be charged for courses in the laboratory sciences.

Fees for Special and Irregular Students

All special students, and irregular students (i. e., students who have satisfied the entrance requirements, but take less than twelve hours a week by special permission), in the College of Liberal Arts and in the College for Teachers, and all non-resident students in the Graduate School, are charged tuition at the rate of $3.00 per credit hour, per semester, in advance. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to $9.00 a semester, or $18.00 a year. If not paid within one week after the last registration day, an additional fee of $1.00 will be charged. If not paid within four weeks after the last registration day, attendance upon classes will be refused.

External Courses

A fee of five dollars will be charged for admission to *each* External Course.

Special Courses for Teachers

Teachers enrolled in *Special Courses for Teachers* in the University, pay the regular library fee of $5.00 per year. Tuition in these courses is free (a) to all teachers in public schools who are residents of the city; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year, payable in advance.

The laboratory fee in a teacher's course is $5.00 per year.

Laboratory Fees

All laboratory fees are payable strictly *in advance.*

A student shall not be permitted to enter a laboratory course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Biology, $10.00 per semester.

Chemistry, $15.00 per semester; breakage deposit, $10.00.

Geology, $5.00 per semester; $2.50 per semester for a course having but one laboratory period per week.

Metallurgy, $7.50 per semester.

Physics, $10.00 per semester; $5.00 per semester for a course having but one laboratory period per week.

Psychology, $5.00 per semester.

Graduation Fees

All graduation fees must be paid at least two weeks before the day appointed for conferring the degree.

A graduation fee of $5.00 is charged every candidate for the degree of bachelor of arts, and for the degree of bachelor of arts in education. A graduation fee of $10.00 is charged a candidate for the degree of master of arts, and a fee of $20.00 is charged for the degree of doctor of philosophy.

Breakage Deposits

At the beginning of the year, a breakage deposit of $10.00 will be required of each student who takes chemistry. Five dollars of this amount must be kept permanently upon deposit until all accounts with the Department of Chemistry have been settled. For the remaining $5.00 a coupon ticket will be issued, with which supplies and apparatus may be obtained at the store-room. Should this coupon-ticket become exhausted, the student must purchase a new ticket ($5.00) before supplies will be issued to him at the store-room.

Course for Teachers of Art

The fees in the Special Course for Teachers of Art are as follows: matriculation fee, $5.00; tuition fee for non-residents, $18.00 (for one year's instruction in psychology and the history of education); laboratory fee, $25.00 per year; tuition fee, payable at the Art Academy, $25.00 per year.

Miscellaneous Fees

Gymnasium Fee.—A gymnasium fee of $5.00 per annum ($2.50 per semester) will be charged all men in the College of Liberal Arts, in the College for Teachers, and in the College of Engineering, taking six or more hours of work per week. The same fee will be charged all men in the Graduate School who elect twelve hours of work per week.

A fee of $5.00 per annum ($2.50 per semester) will be charged all other men in the University who desire to avail themselves of the privileges of the gymnasium.

Library Fee.—All students in the Graduate School, in the College of Liberal Arts, in the College for Teachers, and in the Evening Academic Courses, must pay a library fee of $5.00 per year at the opening of the session.

Late Registration.—Students who apply for registration or submit schedules of study on days other than those designated will be required to pay a fee of $1.00.

Special Examinations.—A fee of $1.00 will be charged for each supplemental examination for the removal of conditions, and this fee must be paid even though the condition is removed without a supplemental examination. A fee of $5.00 will be charged for entrance examinations on days other than those specified in the calendar. Every candidate who applies for the removal of a condition must present to the head of the department in which the condition occurred a receipt showing that the candidate has paid the fee of $1.00, before the said head of department may report the removal of a condition to the Registrar.

EXPENSES

	Graduate School Liberal Arts, or College for Teachers	Engineering	Medicine
Tuition Fees	$75 00	$75 00	$125 00
Library Fees	5 00	5 00	.....
Library and Matriculation Fee, payable each year	.....	.....	$5 00
Gymnasium Fee	5 00	5 00	5 00
Laboratory Fees	*	$35 to $45	.....
Books	$20 to $25	$25 to $30	$45 to $60
Board and Room, per week	$5 to $8	$5 to $8	$5 to $8
Total Expense per year	$325 to $450	$350 to $450	$375 to $500

The Secretary of the University will furnish information regarding suitable boarding places in the vicinity of the University.

* Laboratory fees vary according to the courses taken.

THE GRADUATE SCHOOL

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.
JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.
FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Commerce.
HARRIS HANCOCK, Ph. D., D. Sc., . . . Professor of Mathematics.
JOHN MILLER BURNAM, Ph. D., ... Professor of Latin.
MAX POLL, Ph. D., . . . Professor of the Germanic Languages.
JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.
* MERRICK WHITCOMB, Ph. D., ... Professor of History.
LOUIS TRENCHARD MORE, Ph. D., ... Professor of Physics.
BURTIS BURR BREESE, Ph. D., ... Professor of Psychology.
WILLIAM PAXTON BURRIS, A. M., L. H. D., Professor of the History and Principles of Education.
JOHN WILLIAM HALL, A. M., Professor of Elementary Education.
STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.
NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.
LAUDER WILLIAM JONES, Ph. D., ... Professor of Chemistry.
GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.
FRANK WADLEIGH CHANDLER, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
PHILLIP OGDEN, Ph. D., . . . Professor of Romance Languages.
PAUL GERHARDT WOOLLEY, B. S., M. D., . Professor of Pathology.
MARTIN HENRY FISCHER, M. D., Joseph Eichberg Professor of Physiology.
HENRY MCELDERRY KNOWER, Ph. D., . . . Professor of Anatomy.
** HARRIS MILLER BENEDICT, A. M., ... Professor of Botany.
HENRY SKINNER WEST, Ph. D., Professor of Secondary Education.
SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.
——— ———, ... Professor of Zoology.
GEORGE MOREY MILLER, A. M., . . Associate Professor of English.
HARRY SHIPLEY FRY, Ph. D., . . Associate Professor of Chemistry.
WILLIAM BUCHANAN WHERRY, A. B., M. D., Associate Professor of Bacteriology.

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* Absent on leave, 1913-14.

** Absent on leave, first semester, 1913-14.

Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Claude M. Lotspeich, Ph. D., . Assistant Professor of German.
Emilie Watts McVea, A. M., . . Assistant Professor of English.
Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Edward F. Malone, A. B., M. D., Assistant Professor of Anatomy.
J. Ernest Carman, B. S., . . . Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, A. M., Assistant Professor of Economics and Social Science.
James Aston, Ch. E., ... Assistant Professor of Metallurgy.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
James Francis Dilworth, A. M., . Instructor in English History.
Leroy James Cook, A. M., ... Instructor in French.
Henry G. Hartmann, Ph. D., ... Instructor in Philosophy.
Clarence A. Nash, A. M., . . Instructor in Physical Chemistry.

INFORMATION FOR STUDENTS

ADMISSION

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School. Students will not be admitted to the Graduate School after the third week of the semester.

INSTRUCTION

The work of each candidate for a graduate degree shall be under the direction of an Advisory Committee, composed of the Dean of the Graduate School and the heads of the departments in which the work is taken.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

In order to receive the Master's degree the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar, not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School. Students taking work in courses open to graduates and undergraduates shall be required to complete an additional amount of work estimated to be fifty per cent of the regular undergraduate requirements. Candidates for the degree of Master of Arts must pass an oral examination in their major subjects before a committee of the faculty.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

For the Doctor's degree, three years of graduate study will ordinarily be required. In exceptional cases a student may be admitted to examinations at the end of two years. Where his college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided that such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German. In order to receive the degree of Doctor of Philosophy, the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. (For particulars see page 17). The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

COURSES OF INSTRUCTION

For detailed description of the courses given in the Graduate School, see the Announcements of the College of Liberal Arts and the College for Teachers.

ANATOMY

7. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the head of the department.

Professor Knower, Assistant Professor Malone.

ASTRONOMY

For Courses Open to Graduates See Page 65.

BIOLOGY

To pursue advanced courses in botany or zoology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES

To enter upon work for the degree of Master of Arts in zoology students must have completed Courses 1a, 2a, 3b, 4b, 15, 17b, 18b, 19a, 20a, or their equivalents, while in botany the required preliminary courses are 5a, 6a, 7b, 8b, 35, 24a, 25a, 26b, 27b, or their equivalents. (See Biology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When botany or zoology is chosen as a minor for the Degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology or botany. The requirements for a higher degree, when botany or zoology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 30).

Primarily for Graduates

30. Current Problems in Zoology.
Assistant Professor Wieman.

31. Research. Hours to be arranged.
Professor Benedict, Assistant Professor Wieman, and Assistant Professor Chambers.

For Other Courses Open to Graduates See Page 69.

CHEMISTRY

SPECIAL REQUIREMENTS FOR HIGHER DEGREES

The Degree of Doctor of Philosophy

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12a, 13a. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the advanced courses required in connection with the choice made. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12a and 13a (one semester) will be required; if one of the biological

sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree

The Department of Chemistry requires that at least sixteen of the twenty-four credit hours shall be taken in chemistry. The student must present a thesis embodying the results of some experimental work, or a written account in some detail of a subject suggested by the instructor under whose direction the student has been placed.

Primarily for Graduates

30. Research.
Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch,
Assistant Professor Aston.

35b. Some Special Problems and Theories of Organic Chemistry. Professor Jones.

40. Journal Club Meetings. Papers by instructors and advanced students.

For Other Courses Open to Graduates See Page 74.

ECONOMICS

(The Sinton Professorship)

For Courses Open to Graduates See Page 78.

EDUCATION

Education 3. Principles and Problems of Secondary Education.—S., 9:30-11:30. Professor West.

Open to graduates and teachers who contemplate appointment to high school positions. For the conditions under which graduate students may enter the course see Program II, page 120.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. W., 4:00-6:00.
Professor Burris and Professor West.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Two hours, to be arranged.
Professor Hall and Assistant Professor Mead.

Education 1, 2 and 6.—These courses (for description of which see Announcement of the College for Teachers), when pursued by graduate students, may be counted for credit towards a graduate

degree, provided such students do satisfactory pieces of independent work and embody the results of same in acceptable written theses. The number of credits allowed, respectively, for these courses, will be six, six, and two.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

For Graduates Only

20. Seminary.—Studies in Literary Theory. T., 3:30-5:30.
Professor Chandler.

For Courses Open to Graduates See Page 83.

GEOLOGY AND GEOGRAPHY

For Courses Open to Graduates See Page 86.

GERMAN

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—*Second semester,* T., 4:00-6:00.
Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.

Omitted in 1913-14.

7. Middle High German.—M., 4:00-6:00.
Omitted in 1913-14. Assistant Professor Lotspeich.

8. Old High German.—M., 4:00-6:00.
Assistant Professor Lotspeich.

13. Gothic.—W., 4:00-6:00. Assistant Professor Lotspeich.
Omitted in 1913-14.

26. Old Norse.—W., 4:00-6:00.
Assistant Professor Lotspeich.

9b. German Seminary.—*Second semester,* T., 4:00-6:00.
Omitted in 1913-14. Professor Poll.

For Other Courses Open to Graduates See Page 88.

GREEK

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00. Professor Harry.

7. Greek Seminary.—Aristophanes (1912-13); Homer (1913-14). M., 3:00-5:00. Professor Harry.

Open to graduates and to those who have completed the undergraduate courses in Greek.

For Other Courses Open to Graduates See Page 91.

HISTORY

For Courses Open to Graduates See Page 92.

LATIN

Primarily for Graduates

(Hours in all cases to be arranged)

9. Latin and Romance Palæography.—Professor Burnam.

Prerequisite: Four years of undergraduate work and ability to read French and German.

10. Latin Seminary.—Cicero. Professor Burnam.

12. Graduate Study.—Credit according to the work elected and completed under the direction of the teaching staff of the Department. Professor Burnam.

MATHEMATICS

Primarily for Graduates

33. Advanced Algebra, Part I.—M., Th., 4:00-6:00. Omitted in 1913-14. Professor Hancock.

34. Advanced Algebra, Part II.—M., Th., 4:00-6:00. Professor Hancock.

30. Theory of Numbers, Part I.—T., 4:00:6:00; S., 10:30-12:30. Omitted in 1913-14. Professor Hancock.

31. Theory of Numbers, Part II.—T., 4:00-6:00; S., 10:30-12.30. Professor Hancock.

Omitted in 1913-14.

32. Theory of Numbers, Part III.—T., 4:00-6:00; S., 10:30-12:30. Professor Hancock.
Omitted in 1913-14.

24. Elliptic Functions. Part I.—Analysis.
Omitted in 1913-14. Professor Hancock.

25. Application of Elliptic Functions. Part II.—W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.
Omitted in 1913-14.

20. Theory of Maxima and Minima Involving Several Variables.—W., 4:00-6:00; S., 11:30-12:30. Professor Hancock.
Omitted in 1913-14.

18a. Theory of Minimal Surfaces.—*First semester,* T., Th., S., 8:30-9:30. Professor Hancock.
Omitted in 1913-14.

28. Theory of Functions.—Lectures on the Theory of Functions of a Complex Variable. S., 9:30-11:30.
Omitted in 1913-14. Assistant Professor Moore.

29. Theory of Functions of a Real Variable.—S., 9:30-11:30.
Assistant Professor Moore.

For Other Courses Open to Graduates See Page 97.

MATHEMATICS (APPLIED)

Primarily for Graduates

26. The History and Teaching of Mathematics.—M., 4:00-6:00.
Omitted in 1913-14. Professor Slocum.

11b. Fourier's Series and Spherical Harmonics.—*Second semester,* Th., 4:00-6:00; S., 9:30-10:30. Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—*First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

16a. Theoretical Mechanics.—*First semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.
Omitted in 1913-14.

16b. The Mathematical Theory of Elasticity.—*Second semester,* M., 4:00-5:00; Th., 4:00-6:00. Professor Slocum.
Omitted in 1913-14.

For Graduates Only

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid or gaseous bodies.
Professor Slocum.

For Other Courses in Mathematics See Page 97.

PATHOLOGY AND BACTERIOLOGY

8. Research.—Open to any qualified person after consultation with the head of the department.

Professor Woolley, Associate Professor Wherry.

PHILOSOPHY

Primarily for Graduates

19. The Philosophy of Immanuel Kant with special reference to its historical development.—T., 12:30-2:30. Dr. Hartmann.

21. The Philosophy of Religious Experience.—Th., 12:45-2:45. Professor Tawney.

For Other Courses Open to Graduates See Page 99.

PHYSICS

For Graduates Only

7. Lectures on Theoretical Physics. Professor More.

25a. Theoretical Mechanics.—See under Applied Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Professor More and Associate Professor Allen.

For Other Courses Open to Graduates See Page 103.

PHYSIOLOGY

(The Joseph Eichberg Professorship)

7. Research.—Open to any qualified person after consultation with the head of the department. Professor Fischer.

POLITICAL AND SOCIAL SCIENCE

For Courses in Political and Social Science Open to Graduates See Pages 105, 106.

PSYCHOLOGY

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Th., 3:00-5:00. Professor Breese.

6a. Educational Psychology.—*First Semester.* Hours to be arranged. Professor Breese.

For Other Courses Open to Graduates See Page 108.

ROMANCE LANGUAGES

For Courses Open to Graduates See Pages 110, 111, and 112.

McMICKEN COLLEGE OF LIBERAL ARTS

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.
JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.
FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Commerce and Supervisor of the Evening Academic Courses.
HARRIS HANCOCK, Ph. D., D. Sc., . . . Professor of Mathematics.
JOHN MILLER BURNAM, Ph. D., ... Professor of Latin.
MAX POLL, Ph. D., . . . Professor of the Germanic Languages.
JOSEPH EDWARD HARRY, Ph. D., ... Professor of Greek.
* MERRICK WHITCOMB, Ph. D., ... Professor of History.
LOUIS TRENCHARD MORE, Ph. D., Professor of Physics and Dean of the McMicken College of Liberal Arts.
BURTIS BURR BREESE, Ph. D., ... Professor of Psychology.
STEPHEN ELMER SLOCUM, Ph. D., Professor of Applied Mathematics.
NEVIN MELANCTHON FENNEMAN, Ph. D., Professor of Geology and Geography.
LAUDER WILLIAM JONES, Ph. D., ... Professor of Chemistry.
GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.
FRANK WADLEIGH CHANDLER, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
PHILLIP OGDEN, Ph. D., . . . Professor of Romance Languages.
** HARRIS MILLER BENEDICT, A. M., ... Professor of Botany.
HENRY S. WEST, Ph. D., ... Director of School Affiliation.
SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.
——— ———, ... Professor of Zoology.
GEORGE MOREY MILLER, Ph. D., . . Associate Professor of English.
HARRY SHIPLEY FRY, Ph. D., . Associate Professor of Chemistry.
SAMUEL JAMES MCINTOSH ALLEN, Ph. D., Associate Professor of Physics.
ISAAC JOSLIN COX, Ph. D., . . . Associate Professor of History.
CLAUDE M. LOTSPEICH, Ph. D., . Assistant Professor of German.
EMILIE WATTS MCVEA, A. M., Assistant Professor of English and Dean of Women.
CHARLES NAPOLEON MOORE, Ph. D., Assistant Professor of Mathematics.

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* Absent on leave, 1913-14.
** Absent on leave, first semester, 1913-14.

Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and English.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.
——— ———, ... Assistant Professor of Political Science.
James Aston, Ch. E., ... Assistant Professor of Metallurgy.
Alfred Brodbeck, ... Director of Physical Education.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Arthur James Kinsella, A. M., ... Instructor in Greek.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
James Francis Dilworth, A. M., . Instructor in English History.
Bishop Platt Evens, Mechanician and Instructor in Laboratory Arts.
Cora May Box, A. M., ... Instructor in Zoology.
Marguerite Gray, A. B., . . . Instructor in Physical Education.
Vernon Lantis, A. M., ... Instructor in Botany.
Leroy James Cook, A. M., ... Instructor in French.
Eleanor Katherine Nippert, A. B., . . . Instructor in German.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Henry G. Hartmann, Ph. D., ... Instructor in Philosophy.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.
Clarence A. Nash, A. M., . . Instructor in Physical Chemistry.
Edwin W. Esslinger, A. M., . Instructor in Analytical Chemistry.
Philip W. MacDonald, A. M., ... Instructor in History.
——— ———, ... Instructor in Economics.
——— ———, ... Instructor in Engineering Geology.

Other Appointments

Charles Hecker, Ch. E., A. M., ... Assistant in Chemistry.
Schachne Isaacs, A. M., ... Assistant in Psychology.
Raphael Isaacs, A. M., ... Assistant in Embryology.
——— ———, Assistant in History and D. A. R. Fellow in American History.
Walter H. Bucher, Ph. D., Assistant in Geology and Geography.
——— ———, ... Hanna Fellow in Physics.
Emma Andriessen, A. M., . . . Graduate Assistant in German.
Leonard Martin Merrill, A. B., Graduate Assistant in Chemistry.

REQUIREMENTS FOR ADMISSION TO THE McMICKEN COLLEGE OF LIBERAL ARTS

Candidates for admission as undergraduates must be at least sixteen years of age. They must give evidence of having completed satisfactorily an amount of preparatory study represented by sixteen units, a unit being understood to mean one of the subjects in the following table pursued for one full year of five recitation periods each week. Of these sixteen units every candidate for admission to the McMicken College of Liberal Arts must present the following:

English—Three units, in which there can be no "condition."

Mathematics—One unit in Algebra and one unit in Plane Geometry.

History—One unit.

Language—Three units, from the five languages: Latin, Greek, French, German, Spanish; two units must be in the same language. Candidates who intend to pursue the study of Latin in the University must present four units in Latin.

In addition to these fixed requirements the candidate must offer a number of units selected from the list of subjects below, sufficient, with the units specified above, to amount to a total of sixteen. The number of units that may be offered in any subject is shown in the following table:

	Number of Units Accepted for Admission			
	Minimum			Maximum
English	3	required	or	4
Latin	1	Three units required, two of which must be in one language	or 2 or 3 or	4
Greek	1		or 2	3
French	1		or 2 or 3 or	4
German	1		or 2 or 3 or	4
Spanish	1		or	2
General or Medieval and Modern History	1			1
			or	1
Ancient	½	One unit required		1
English	½		or	1
American	½		or	1
American and Civics	1			1
Algebra	1	required	or	1½ or 2
Geometry, Plane	1	required	or	1
Geometry, Solid	½		or	½
Trigonometry	½		or	1
Civics	½			½
Physics	1			1
Chemistry	1			1
*Zoology	1			1
*Botany	1			1
Physical Geography	½		or	1
Astronomy	½			½
Drawing	1			2
Manual Training	1			2
Domestic Science	1			4

* One-half unit will be allowed in Zoology and one-half unit in Botany when these two subjects are presented together as one unit in the same year.

ENTRANCE CONDITIONS

Students who are deficient in not more than two units of the sixteen required for admission may be admitted conditionally to the College of Liberal Arts. All such entrance conditions must be removed before the student is allowed to register at the beginning of his second year of residence at the University.

ENTRANCE EXAMINATIONS

Examinations for admission will be held on September 15, 16, 17, 18, 19, 20, 1913. In 1914 they will be held on January 5, 6, 7, 8, 9, 10, and on June 15, 16, 17, 18, 19, 20.

Students who desire to take these examinations must obtain permission beforehand from the Director of School Affiliation. All applications for permission to take the entrance examinations should be made at least two days before the first day of the examination period. Some of the examinations may be taken in the spring and the remainder in the fall if so desired. Students who apply for entrance examinations at times other than the days specified will be charged a fee of five dollars.

A candidate for admission to the University, coming from one of the accredited schools, who is not a graduate of such school, will not be admitted to the entrance examinations within one year after leaving such preparatory school, unless recommended for examination by the principal of the school from which he comes.

Students intending to take these entrance examinations should consult the statement of the entrance requirements, as printed on a preceding page, and arrange to take their examinations

(a) in the fixed requirements, and

(b) in enough additional subjects to make a total of sixteen units.

The work covered by each unit or group of units in the various subjects may be found on the following pages. Specimen entrance examination questions will be furnished free of charge on application to the Director of School Affiliation.

SCHEDULE OF ENTRANCE EXAMINATIONS

September 15, 1913; January 5, and June 15, 1914:

8:30–11:00	English	3 units
11:00–12:00	English	1 unit additional
1:00– 3:00	Physics	1 unit
3:00– 4:00	Solid Geometry	½ unit
4:00– 5:00	Physical Geography	½ or 1 unit

September 16, 1913; January 6, and June 16, 1914:

8:30–10:30....Latin.....1 or 2 units
10:30–12:00....Latin.....1 or 2 units additional
1:00– 3:00....Chemistry.....1 unit
3:00– 4:00....Astronomy.....½ unit
4:00– 5:00....Civics.....½ unit

September 17, 1913; January 7, and June 17, 1914:

8:30–10:30....French.....1 or 2 units
10:30–12:00....French.....1 or 2 units additional
1:00– 2:30....Plane Geometry.....1 unit
2:30– 4:00....Algebra.....1 unit
4:00– 5:00....Advanced Algebra.....½ or 1 unit additional

September 18, 1913; January 8, and June 18, 1914:

8:30– 9:30....Ancient History.....½ or 1 unit
9:30–10:30....American History.....½ or 1 unit
10:30–12:00.... { General or Medieval and Modern History..... } .....1 unit.....
1:00– 2:00....English History.....½ or 1 unit
2:00– 3:00....American History and Civics.....1 unit
3:00– 5:00....Spanish.....2 units

September 19, 1913; January 9, and June 19, 1914:

8:30–10:30....German.....1 or 2 units
10:30–12:00....German.....1 or 2 units additional
1:00– 3:00....Zoology.....½ or 1 unit
3:00– 5:00....Botany.....½ or 1 unit

September 20, 1913; January 10, and June 20, 1914:

8:30–10:30....Greek.....1 or 2 units
10:30–11:30....Greek.....1 unit additional
11:30–12:00....Drawing.....1 unit
1:00– 2:00....Trigonometry.....½ or 1 unit
4:00– 5:00....Manual Training.....4 units
4:00– 5:00....Domestic Science.....4 units

DEFINITION OF UNITS

Detailed statements showing the exact amount of work required for each unit or group of units in the various subjects are here presented:

ENGLISH COMPOSITION AND LITERATURE

I. Three Units.—The preparation should include the following subjects:

Composition.—There should be practice in writing at regular and frequent intervals throughout all the years of the preparatory course. Special attention should be given to the proper structure of sentences and paragraphs, and the method of planning or outlining an essay.

Grammar.—It is expected that the applicant will be familiar with the essentials of English grammar, and will be able to explain the construction of sentences that occur in the classics he has read.

English Classics.—The following books are recommended for reading and study:

For Reading in 1913, 1914, and 1915

I. The *Old Testament,* comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey,* with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad,* with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid.* The *Odyssey, Iliad,* and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. Shakespeare's *Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Caesar.*

III. Defoe's *Robinson Crusoe,* Part I; Goldsmith's *Vicar of Wakefield;* Scott's *Ivanhoe* or *Quentin Durward;* Hawthorne's *House of the Seven Gables;* Dickens' *David Copperfield* or *Tale of Two Cities;* Thackeray's *Henry Esmond;* Mrs. Gaskell's *Cranford;* George Eliot's *Silas Marner;* Stevenson's *Treasure Island.*

IV. Bunyan's *Pilgrim's Progress,* Part I; the *Sir Roger de Coverley* papers in *The Spectator;* Franklin's *Autobiography* (condensed); Irving's *Sketch Book;* Macaulay's *Essays on Lord Clive* and *Warren Hastings;* Thackeray's *English Humourists; Selections* from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and the Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's *Oregon Trail;* either Thoreau's *Walden,* or Huxley's *Autobiography* and selections from *Lay Sermons,* including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's *Inland Voyage* and *Travels with a Donkey.*

V. Palgrave's *Golden Treasury* (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard* and Goldsmith's *Deserted Village;* Coleridge's *Ancient Mariner* and Lowell's *Vision of Sir Launfal;* Scott's *Lady of the Lake;* Byron's *Childe Harold,* Canto IV, and *Prisoner of Chillon;* Palgrave's *Golden Treasury*

(First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; Poe's *Raven,* Longfellow's *Courtship of Miles Standish,* and Whittier's *Snow-Bound;* Macaulay's *Lays of Ancient Rome* and Arnold's *Sohrab and Rustum;* Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City.*

For Intensive Study in 1913, 1914, and 1915

Shakespeare's *Macbeth;* Milton's *L'Allegro, Il Penseroso,* and *Comus;* either Burke's *Speech on Conciliation with America,* or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* either Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns.*

All the books should be read with care and appreciation, but particular attention should be given, with regard to form, structure, and style, to those intended for intensive study. In addition, the student should have some definite knowledge of the lives of the authors read and of the history of their times.

II. Four Units.—For four units in English composition and literature the preparation should extend throughout the four years of the high school course. Besides the subjects mentioned above, the applicant should have studied the outlines of English literary history. His study should be based upon one of the recent manuals of English literature, the study of the text being accompanied by as much reading as possible of representative authors.

LATIN

I. First Unit.—The student should have digested some Beginner's Book like that of Coy, or Collar and Daniel.

II. Second Unit.—Caesar's *Gallic War,* Books I-IV, or an equivalent amount selected from the remaining portions of that work. It is expected that in the first year's preparation the student has mastered the declensions, comparisons, and verbal inflections, knows the leading rules of syntax, and possesses some vocabulary. Along with Caesar there should be some exercise in Latin Composition, a wider and deeper acquaintance with grammatical principles of the language, and a good vocabulary. Sallust's *Catiline* or an equivalent amount of the *Jugurtha* may be substituted for two books of Caesar. It is furthermore suggested that the teacher, if possible, vary the Caesar lessons by selections from Books V-VII. The Department of Latin is also willing to accept Miller and Beeson's second year Latin Book as a substitute for Caesar.

III. Third Unit.—Cicero, *In Catilinam*, I-IV, and *Pro Archia*, with more practice in composition. It is also preferred that the student should study an additional oration or short treatise, e. g., *de Amicitia*, or selections from the *Letters*. He should also begin the practice of writing continuous prose.

IV. Fourth Unit.—Vergil's *Aeneid*, I-VI, with scanning and prosody. An equivalent amount of verse from *Aeneid*, VII-XII, or Ovid will be accepted in place of *Aeneid*, III and V. If circumstances permit, it is very advantageous to let Ovid precede Vergil. It is preferable that the composition done during this year be based on Cicero.

GREEK

I. First Unit.—White's *Beginner's Book* or an equivalent. Grammar and composition work.

II. Second Unit.—Xenophon's *Anabasis*, Books I and II. Grammar and composition work.

III. Third Unit.—In addition to the work outlined in paragraphs I and II, the following:

Xenophon, *Anabasis*, Books III and IV.

Homer, *Iliad*, Books I-III.

Composition.

Grammar: Babbitt, Goodell, Goodwin, or Hadley-Allen

FRENCH

I. One Unit.—

(a) The translation at sight of very simple French prose.

(b) The translation into French of easy sentences to test the candidate's familiarity with elementary grammar.

(c) One full year of five periods a week is necessary to meet the requirements in one unit. The first one hundred and fifty pages in Fraser and Squair's *French Grammar* may be taken as a standard of the amount of grammar which should be covered during that period.

II. Two Units.—

(a) The translation at sight of ordinary prose. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the regular verbs; the auxiliaries être, avoir; the more frequent irregular verbs.

(c) The translation into French of sentences to test the candidate's familiarity with elementary grammar.

Two full years of five periods a week are necessary to meet the requirements in two units. Fraser and Squair's *French Grammar*, complete, may be taken as a standard of the amount of grammar

which should be covered during that period. Not less than three hundred duodecimo pages should be read from the works of at least three different authors. Suitable texts for these two units are: *Le Siège de Berlin* and *La Dernière Classe*, Daudet; *La Mère Sauvage*, Maupassant; *Le Tour de la France*, Bruno; *Le Petit Chose*, Daudet; *Sans Famille*, Malot; *La Tache du Petit Pierre*, Mairet; *La Poudre aux Yeux*, Labiche et Martin; *Le Voyage de M. Perrichon*, Labiche et Martin; *La Cigale chez les Fourmis*, Legouvé et Labiche.

III. Three Units.—A continuation for one year of work just outlined. The candidate should be able to read at sight ordinary French prose or poetry, to translate into French easy English prose, to answer questions involving a more thorough knowledge of the essentials of French syntax, especially the ordinary uses of tenses and modes. It is expected that the candidate for three units will have worked through a grammar and will have read five or six hundred pages of French during three years of five periods a week. Suitable texts for these three units are: The plays of Labiche, Scribe, etc.; *Gil Blas*, Lesage; *Le Tour de la France*, Bruno; *La Belle Nivernaise*, Daudet; *Les Fourberies de Scapin*, *Le Médicin Malgré Lui*, Molière; Voltaire's historical writings; *Le Cid*, Corneille; Coppée's poems, etc.

IV. Four Units.—

(a) The translation at sight of standard French. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the irregular verbs and the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

(c) The translation into French of a connected passage of English prose.

(d) The writing of a theme in French on a given topic.

Four full years in a good preparatory school are necessary to meet the requirements for four units. Not less than six hundred pages should be read from the works of at least five different authors. Suitable texts besides those given above are *Colomba*, Mérimée; *La Mare au Diable*, Sand; *Pêcheur d' Islande*, Loti; *La Canne de Jonc*, Vigny; *Horace*, Corneille; *L' Avare* and *Le Bourgeois Gentilhomme*, Molière; *Athalie*, Racine; *Le Gendre de M. Poirier*, Sandeau; *Récits des Temps Mérovingiens*, Thierry; *L' Expédition de Bonaparte en Egypte*, Thiers.

The student should have constant practice in giving paraphrases and abstracts. He should be trained to write French from dictation in order to enable him to understand lectures delivered in that language.

GERMAN

I. One Unit.—

(a) The translation at sight of very simple German prose.

(b) The translation into German of easy sentences, to test the candidate's familiarity with elementary grammar.

The candidate ought to have read not less than one hundred pages of easy German, such as is found in Howell's or Harris's *German Reader.*

II. Two Units.—

(a) The translation at sight of simple German prose.

(b) The translation into German of easy connected prose, to test the candidate's familiarity with elementary grammar. The requirement in elementary grammar includes the conjugation of the weak and strong verbs; the declination of articles, adjectives, pronouns, and such nouns as are readily classified; the prepositions; the simpler uses of the modal auxiliaries; the elements of syntax, especially the rules governing the order of words.

The candidate ought to have read not less than two hundred pages of easy German, such as is found in Hewett's or Harris's *German Reader.*

In general, to obtain two units in German, two years' work in a good preparatory school is required.

III. Three Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate ought to have read not less than four hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Wilhelm Tell;* Lessing's *Minna von Barnhelm;* Goethe's *Hermann und Dorothea;* Wildenbruch's *Das edle Blut;* Fontane's *Vor dem Sturm;* Moser's *Kopnickerstrasse.*

Generally speaking, three years' work in a good preparatory school will be necessary in order to meet the requirements for three units.

IV. Four Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar. The candidate will be expected to show a thorough knowledge of

accidence, the principal uses of prepositions and conjunctions, and the essentials of syntax, especially the uses of the modal auxiliaries and of the subjunctive and infinitive modes.

The candidate ought to have read not less than six hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Jungfrau von Orleans;* Goethe's *Iphigenie;* Freytag's *Die Journalisten, Soll und Haben, Bilder aus der deutschen Vergangenheit;* Riehl's *Culturgeschichtliche Novellen.*

In general, to obtain four units in German, four years' work in a good preparatory school is required.

SPANISH

I. One Unit.—

(a) The translation at sight of simple Spanish prose.

(b) The essentials of grammar, including the conjugations of the regular and the most frequently used irregular verbs. The translation into Spanish of short sentences, intended to test the candidate's knowledge of the essential points in grammar. Conversation and dictation.

In general, one year's work in a preparatory school, or its equivalent, is necessary to meet the requirements for one unit. The candidate will be expected to have worked through a short Spanish grammar, or the principal parts of a more complete one, and to have read at least one hundred pages of simple Spanish. Suitable texts for one unit are: *Spanish Reader,* Bronsby; *Victoria y Otros Cuentos,* Asensi; *Gil Blas,* Padre Isla; *El Pájaro Verde,* Valera; *O Locura o Santidád,* Echegaray; *Zaraguëta,* Carrión y Vital Aza; *El Clavo,* Alarcón, etc.

II. Two Units.—

In general, two years' work in a preparatory school, or its equivalent, will be needed to meet the requirements for two units. In addition to the work outlined in Paragraph I, the candidate will be expected to have worked through an elementary composition book and to have read from two to three hundred pages of modern Spanish. Suitable texts for the second unit are: *El Capitán Veneno,* Alarcón; *El Sí de las Niñas,* Moratín; *Doña Perfecta,* Galdós; *Guzmán el Bueno,* Gil y Zárate; *Cuentos Alegres,* Taboada; *Legends, Tales, and Poems,* Bécquer; *El Haz de Leña,* Nuñez de Arce; *José,* Valdés, etc.

MATHEMATICS

I. Algebra. One Unit. Definitions.—Integral numbers. Rational numbers. Irrational numbers. The six fundamental operations of algebra. Algebraic expressions. Rational Algebraic expressions. Application of the four fundamental operations to Rational Algebraic expressions. The use of parentheses. Especial emphasis given to working within the parentheses. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, simple and complex. Simple equations, both numerical and literal, containing one or more unknown quantities. Systems of equations. Problems depending on linear equations. Involution and evolution of monomials and polynomials. Radicals, including rationalization. Exponents, including the fractional and negative. Imaginary quantities. Elementary treatment of quadratic equations. The solution of simple problems in quadratic equations.*

II. Algebra. One and one-half units.—In addition to Paragraph I, the following: The completion of quadratic equations, both numerical and literal. A standard form for the solutions of these equations. The discriminant condition for equal roots, real and imaginary roots. Relations among the roots and the co-efficients of the equation. The nature of the roots when the different co-efficients approach zero. Simultaneous quadratic equations. Systems of equations, simple and quadratic. Property of quadratic surds and solution of equations containing radicals. Problems leading to quadratic equations. Ratio and proportion. The binomial theorem for positive integral exponents.

III. Algebra. Two units.—In addition to the work outlined in Paragraphs I and II, the following: Convergence of infinite series. Binomial theorem with fractional negative exponents. Exponential and logarithmic series. Formation of logarithms to base e, to base 10. Properties and application of logarithms. The progressions. Continued fractions.

IV. Plane Geometry. One unit.—The work required in Plane Geometry is practically the equivalent of the first five books in Wells',

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* It is assumed that the pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Familiarity with the metric system is pre-supposed. Some of these problems should be chosen from mensuration, from physics and from commercial life. The use of graphic methods and illustrations, particularly in connection with the solution of equations, is also expected. On the other hand, the student must be guarded against the tendency to become mechanical in his algebraic work. Algebra is not to be used as a T-square. Above all, the student should be thoroughly grounded in the fundamental principles, operations and definitions. It is recommended that Wells's Academic Algebra, Wentworth's Algebra, or an equivalent be used.

Sanders', or Wentworth's Geometry. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of lines and plane surfaces.

V. Solid Geometry. One-half unit.—The usual theorems and constructions of good text-books. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of surfaces and solids.

VI. Plane Trigonometry. One-half unit.—Definitions and relations of the six trigonometric functions as ratios, not as lines. Circular measurement of angles. Proofs of principal formulas, in particular those for the sine, cosine and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expression for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

VII. Trigonometry. One unit.—In addition to Paragraph VI, the following: Solutions of triangles, right-angled and oblique, requiring a knowledge of logarithms. Application to heights and distances. Demoivre's Theorem. Properties of spherical triangles. Formulas connecting the sides and angles of spherical triangles. Napier's Analogies. Gauss' Theorem. Solution of spherical triangles.

PHYSICS

One unit.—The candidate must be well prepared in the elementary theory of the subject and must present a note-book showing the quantitative work done by him in the laboratory. One full year of four to five periods a week is necessary to meet the requirements for one unit.

The instruction in the class-room should include qualitative lecture-room experiments, the solution of numerous problems, and the study of some one standard text-book, such as Hall and Bergen.

Every candidate for admission on examination is required to present a laboratory note-book, signed by the teacher, containing the results of quantitative experiments performed by him in the laboratory. At least thirty quantitative experiments must have been performed, of which ten must be in mechanics, and which must also include three of the subjects, light, heat, electricity, and sound. The thirty experiments are to be selected from a list of sixty or more, which may be had by addressing the Secretary of the University, or from the list adopted by the National Educational Association, which may be found in *The Teaching of Chemistry and Physics*, Smith and Hall, Chapter X.

Laboratory note-books will be examined for neatness, language, accuracy, and proficiency in physics. They should be called for within one month after presentation.

CHEMISTRY

One unit.—The student's preparation should consist of an elementary course in chemistry (one year)* of the character taught in the better class of high schools. It should include:

(a) Individual laboratory work, to the extent of at least one-third of the time;

(b) Instruction by lecture table demonstration, to be used when expensive apparatus or superior skill in manipulation is indispensable;

(c) The study of at least one standard text-book, to the end that the pupil may gain a connected view of the subject.

Either in the class-room or by experimental treatment in the laboratory, the course should take up for consideration the important modes of occurrence, the principal methods of preparation, the essential physical and chemical properties, and the recognition of the elementary substances and their chief compounds, commonly considered in the standard text-books. More detailed study should be given to those of frequent occurrence, or of especial scientific importance.

The candidate should be able to state the significance of such commonly used terms as homogeneous body, solution, element, compound. By the use of definite examples, he should be able to show what kinds of facts have led to the formulation of such essential laws as the laws of definite and of multiple proportions, the law of combining weights, the laws of the expansion of gases, and the law of volumes of reacting gases.

He should be qualified to give a statement of the nature of the processes by the aid of which chemists determine equivalent weights, choose molecular weights, and select atomic weights; furthermore, to explain the significance of chemical symbols, and the manner of arriving at chemical formulæ (not graphic) after the necessary quantitative data are obtained in the laboratory.

Such terms as valence, acid, base, salt, neutralization, hydrolysis, oxidation, reduction, decomposition, dissociation, electrolysis, ionization, should have a meaning to the student, and he should be prepared to define them correctly, at least by well-chosen illustrations, if they cannot be defined precisely by words.

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* The course should cover from thirty-five to forty weeks, with four to five periods per week. Two hours of laboratory work count as one period of recitation.

At the time of and as part of the examination in chemistry, every student must present a note-book, containing a description of at least forty experiments. The note-book must include drawings of essential pieces of apparatus used, and an index of the experiments. For the list of experiments recommended, address the Secretary of the University. The laboratory note-book should be called for within one month after presentation.

Text-books recommended: McPherson and Henderson, Hessler and Smith, Newell, Bradbury, Remsen (Briefer Course), Torrey, and Story and Lindsay. Other texts than the one prescribed should be available to the student for reference. Ostwald's *Conversations on Chemistry* will be found stimulating and suggestive for collateral reading.

ZOOLOGY

One unit.—The candidate will be required to present his original note-book of practical laboratory study, together with the dates and the endorsement of his teacher, certifying that the book is a true record of the pupil's own work. The note-book should contain carefully labeled outline drawings of the chief structures studied in at least fifteen different animals, together with notes on the same. The note-book will be graded as one-third of the examination. The student will be expected to know the classification of animals into phyla and classes, and he must be able to state the chief characteristics and to compare the general life activities of examples of each of the principal classes. He must know the general plan of internal structure of one vertebrate (frog or fish) in general comparison with the human body; an arthropod (crustacean or insect); an annelid (earth-worm or Nereis); a coelenterate (hydroid, hydra or sea-anemone); a protozoan (a ciliate and amoeba when possible). A mollusk (clam or mussel), an echinoderm or a second vertebrate may be substituted for any of the above types. A knowledge of the very general features of cell division, of the cellular nature of germ-cells, and the essentials of embryological development will be expected, as well as some understanding of the main facts involved in the struggle for existence, adaptation to environment and variation of individuals.

One full year of four to five periods a week is necessary to meet the requirements for one unit.

Such books as Benedict's *Animal Adaptations,* Colton's *Descriptive and Practical Zoology,* Harvey's *Introduction to the Study of Zoology,* or Kingsley's *Comparative Zoology* cover this ground adequately. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY

One unit.—A laboratory note-book containing drawings of the parts of two kinds of flowering plants, of a fern, moss, liverwort, toadstool, lichen, and mould, must be presented with the certificate of his teacher that it is the student's own work. The note-book will count for one-third of the work.

A knowledge of the names and distinguishing characteristics of the different phyla and the classes will be required, and the kind of alternation of generations found in the three highest phyla must be known. A general knowledge of the principal plant societies and the relation between their structures and environments, as well as an understanding of the adaptations by which the flowering plant does its necessary work are important requirements.

Bergen, Bessey, Atkinson, Caldwell, Coulter, and Leavitt are representatives of the type of elementary texts accorded recognition. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY AND ZOOLOGY

One unit.—A unit will be accepted only when Botany and Zoology have each been studied for half a year in one continuous course which extends throughout the year. Such a course will be reckoned as a one-unit course in Biology. A half year of one, independent of the other, will not be accepted. It is strongly recommended that the student devote an entire year to Botany or to Zoology for one unit, instead of combining Botany and Zoology for a single unit.

At least half of the work must have been laboratory work guided by definite directions. A laboratory note-book containing drawings and observations upon at least ten kinds of animals (both vertebrate and invertebrate) and ten kinds of plants (both flowering and non-flowering) must be presented with the certificate of the teacher that it is the student's own work. The student will be required to answer in writing general questions upon familiar animals, such as the frog, fish, earth-worm, paramoecium, crayfish, etc., and upon common plants, such as the fern, moss, mushroom, and simple flowering plants. In both Botany and Zoology a knowledge of the names and distinguishing characteristics of the different phyla and their classes will be required. The note-book will count for one-third of the work.

PHYSICAL GEOGRAPHY

ONE-HALF UNIT.—The scope of the work required for one-half unit in Physical Geography is represented by the standard modern text-books, some of which are named below. This includes the earth as a whole, atmosphere, ocean and land, with special emphasis on the work of water on the land in making topographic features. Entrance examinations may include simple interpretations of topographic maps, weather maps, and such charts as are given in text-books, the pointing out of features of scientific importance in such pictures as are used in text-books, and simple demonstrations with globes.

Dryer, *Lessons in Physical Geography;* Tarr, *New Physical Geography;* Gilbert and Brigham, *Introduction to Physical Geography;* Davis, *Physical Geography;* Ward, *Practical Exercises in Elementary Meteorology;* and *Physiography of the United States* (10 National Geographic Monographs), are recommended as suitable texts.

ONE UNIT.—For a sufficiently thorough and extended knowledge of the subject, and at the option of the examiner, a credit of one unit may be given. Examinations for one unit's credit assumes a knowledge of the larger text-books, a greater familiarity with laboratory exercises, and such a knowledge of the United States as will enable the candidate readily to cite illustrations of all topographic forms. One full year of four to five periods a week is necessary to meet the requirements for one unit.

ASTRONOMY

ONE-HALF UNIT.—The student should be familiar with:

(*a*) Such fundamental notions and definitions as are necessary to locate celestial bodies.

(*b*) The names and positions of the most conspicuous stars and constellations, and be able to trace the positions of the ecliptic across the sky at certain times during the year.

(*c*) The most important facts concerning the form, dimensions, mass, density, rotation and orbital motion of the earth, including seasons, tides, eclipses, and other dependent phenomena; also methods for determining the mass of the earth.

(*d*) The essentials concerning the sun, moon, and planets, including methods for determining their respective distances, motions, etc.

(*e*) The various hypotheses of the stellar universe and cosmogony.

Every student should visit a well-equipped observatory at least twice, once during the day to examine the apparatus, and once at night to view the heavens.

HISTORY

I. General History, or Medieval and Modern History. One Unit.—General History: Myers, Barnes, or G. B. Adams (complete); Medieval and Modern History: Munro and Whitcomb, Myers, Thatcher and Schwill, Harding's *Essentials,* or Robinson's *History of Western Europe* (complete).

II. English History. One unit.—English History: Montgomery, Walker, Andrews, Cheyney, Larned or Wrong (complete). (Where half time is given to this subject a half unit may be offered.)

III. Ancient History. One unit.—Ancient History: Myers, Seignobos, West, or Wolfson (complete). (Where half time is given to the subject a half unit may be offered.)

IV. American History. One unit.—American History: Adams and Trent, Channing, Larned, McLaughlin, Montgomery (student's), McMaster, or Hart's *Essentials* (complete).

V. American History and Civics. One unit.—See list in IV for American History. For Civics, James and Sanford: *Government in State and Nation,* or an equivalent text.

CIVICS

One-half unit.—James and Sanford: *Government in State and Nation,* or an equivalent text. (See V under History above.)

DRAWING

One unit.—One unit for entrance will be allowed for Freehand Drawing or Mechanical Drawing, or both. The student must have done the equivalent of at least two years' work of not less than four periods a week of forty-five minutes each.

The work in Freehand Drawing should include outline drawing from models, principles of light and shade, application of conventional forms, ornaments, design, etc.

The course in Mechanical Drawing should cover lettering, simple geometric problems, projections, solution of problems of helix, cycloid, parabola, etc.

The candidate for admission on examination must present at the time of, and as a part of, his examination a full set of drawings, with the teacher's certificate that they are the candidate's work.

MANUAL TRAINING

Drawing. Two units.—Two units of credit will be allowed the drawing which is given as a part of the Manual Training course, provided it covers four years of work and is done in accordance with the regulations governing laboratory work; that is, twice the time must be given to the subject each week as is given to a regular recitation period.

Shop work. Two units.—Two units of credit will be allowed for shop work of the four-year course in Manual Training. The course must include carpentry, wood turning, pattern making, foundry work, forging, and machine work, and the proper courses in drawing must accompany such work.

The amount of time spent in shop to receive one credit must be at least double the time spent in regular recitation work. The candidate for admission on examination must present at the time of, and as part of his examination, a certified list of courses completed by him, the drawings for the same, and such statements of his work as will give an adequate idea of the efficiency of the course.

DOMESTIC SCIENCE

Four Units.—Work in Domestic Science will be accepted for admission to the extent of four units, provided the work covers four years and is done in accordance with the regulations governing laboratory work; that is, twice the time should be given to this work each week as is given to the academic studies which it displaces. The course should include the drawing and art work which usually accompany a first-class course in this subject. The first two years should include a study of textiles, drafting of patterns, and the making of dresses, and the designing and construction of hats. The last two years of work should consist of the study of cooking, chemistry of foods, home construction and sanitation, dietetics, food adulteration, bacteriology, laundering, decorating, and home economics.

ADMISSION ON CERTIFICATE FROM ACCREDITED SCHOOLS

Work of passing grade will be accepted from graduates of the University's accredited schools in lieu of the entrance examinations upon the presentation of the proper certificate, signed by the principal of the school, certifying to the work of the candidate. All certificates presented for admission must specify the work actually done and the

grade received in each course. Blank forms will be furnished upon application to the Director of School Affiliation.

These certificates, properly made out, should be sent to the Director of School Affiliation, University of Cincinnati, Cincinnati, Ohio, as soon as possible after graduation, and at least five days before the first day of registration. Upon receipt of the certificate, the Director of School Affiliation will pass upon the application, and if it is satisfactory, will send a card of admission, which should be presented to the Registrar at the opening of the session. If the certificate is not satisfactory, the candidate will be informed, so that he may prepare himself for the entrance examinations.

*LIST OF ACCREDITED SCHOOLS

The following preparatory schools and high schools are on the accredited list of the University of Cincinnati. This list is subject to change from year to year, and each school is visited each year by a representative of the University:

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* Superintendents or principals who may desire to have their schools accredited by the University, should address the Director of School Affiliation.

CITY	NAME OF SCHOOL	PRINCIPAL
Bellevue, Ky.	High School	*W. P. King
Cincinnati, O.	Oakhurst Collegiate School	Miss H. F. Kendrick
Cincinnati, O.	The Bartholomew Clifton School	Miss E. A. Ely Mary F. Smith
Cincinnati, O.	Franklin School	J. E. White G. S. Sykes
Cincinnati, O.	The College Preparatory School for Girls	Mary Doherty
Cincinnati, O.	The H. Thane Miller School	Mrs. H. Miller Emma L. Parry
Cincinnati, O.	Hughes High School	E. D. Lyon
Cincinnati, O.	Walnut Hills High School	Wm. T. Harris
Cincinnati, O.	Woodward High School	Pliny A. Johnston
Cincinnati, O.	University School	Wm. E. Stilwell
Cincinnati, O.	Ohio Military Institute	*A. M. Henshaw S. P. C. Roberts §C. B. Wood
Cincinnati, O.	Hartwell High School	Arthur Powell
Cincinnati, O.	Madisonville High School	*C. M. Merry
Cincinnati, O.	Pleasant Ridge High School	*T. L. Simmermon
Cincinnati, O.	Sayler Park High School	*J. O. Falkenburg
Covington, Ky.	High School	H. S. Cox *H. O. Sluss
Danville, Ky.	Kentucky College for Women	‡John C. Acheson
Dayton, O.	Steele High School	C. L. Loos, Jr. *E. J. Brown
Delhi, O.	Mt. St. Joseph on the Ohio Academy	Sister Eveline
Glendale, O.	High School	*J. C. Chapin
Glendale, O.	Glendale College	‡Jane R. DeVore
Hamilton, O.	High School	C. H. Lake *Darrel Joyce
Jeffersonville, Ind.	High School	Emmett Taylor *C. M. Marble
Lawrenceburg, Ind.	High School	Lydia A. Sembach *J. W. Riddle
Lebanon, O.	High School	C. H. Bruner *C. H. Young
Lockland, O.	High School	*S. P. Dial
Ludlow, Ky.	High School	*W. D. Reynolds C. O. Morgan
Maysville, Ky.	High School	Earl F. Chase *J. W. Bradner
Middletown, O.	High School	Elsor Heater *N. D. O. Wilson
Milford, O.	High School	J. F. Hardin *F. P. Timmons
Newport, Ky.	High School	*J. A. Sharon Wm. A. Evans
Norwood, O.	High School	W. W. McIntire *W. S. Cadman
Oldenburg, Ind.	Academy of the Immaculate Conception	Sister M. Clarissa
St. Bernard, O.	High School	Mr. Trisler
Wyoming, O.	High School	*C. S. Fay Evelyn M. Prichard

* Superintendent § Commandant ‡ President

LIST OF RECOGNIZED SCHOOLS

The work of the following schools is recognized by the University. Graduates of these schools will be given entrance credit without examination for such work as they have completed in a satisfactory manner:

CITY	NAME OF SCHOOL	PRINCIPAL
Cincinnati, O.....	East Night High School.....	Albert Schwartz
Cincinnati, O.....	West Night High School.....	E. W. Wilkinson
Dayton, Ky.....	High School.....	J. M. McVey L. N. Taylor, Supt.
Highlands, Ky.....	High School.....	F. A. Cosgrove
Loveland, O.....	High School.....	John Morris, Supt.
Terrace Park, O.....	High School.....	E. H. Foster
Williamsburg, O.....	High School.....	R. C. Franz

ACCREDITED SCHOOLS OF THE NORTH CENTRAL ASSOCIATION

Graduates of the secondary schools approved by the North Central Association of Colleges and Secondary Schools will be admitted to the University of Cincinnati in accordance with the provision for "Admission on certificate from accredited schools." A complete list of schools approved by this Association was printed in the University of Cincinnati Catalogue for 1910-11.

REQUIREMENTS FOR THE BACHELOR OF ARTS DEGREE

The degree of Bachelor of Arts is the only degree conferred upon graduates of the College of Liberal Arts.

The unit for reckoning credit in the University is a subject pursued for one hour per week for one semester. This hour is one credit. One hundred and twenty-four credits are required for the degree of Bachelor of Arts, of which the required subjects as outlined below must be a part. It is required, moreover, that every candidate for this degree must attain a grade not lower than *C* in at least sixty of the one hundred and twenty-four credits.

All students who are candidates for the Bachelor of Arts degree must fulfill the following requirements:

1. English 1, three hours per week, to be taken in the Freshman year.

2. One of the *sciences, Biology, Chemistry, Geology, or Physics, with laboratory work, five hours per week for one year. Those students who elect Mathematics in their Freshman year are permitted to postpone their work in Science until the Sophomore year.

3. A three-hour course for one year in either Psychology or Philosophy, not to be taken in the Freshman year.

4. A reading knowledge of two languages out of five (Greek, Latin, French, German, or Spanish). It is advised that this knowledge be acquired before the Junior year.

Students who have had four years' preparation in either German, French, or Spanish in the High School, will not be required to do further work in these languages in the University, provided they satisfy the head of the department in regard to their reading knowledge of the language. Students who have had two years' preparation in Greek must take at least Greek 15 in addition in fulfillment of the requirement. Students who wish to fulfill the requirement in Latin must have completed Course 1 or its equivalent.

5. A three-hour or two-hour course for one year in History, Poiltical and Social Science, or Economics.

6. Five hours per week in the Department of Physical Education.—It is expected that these hours will be distributed as follows: three hours per week for all members of the Freshman class, and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

On or before the first week of the Senior year students who have not been certified by the heads of the Departments of Greek, Latin, French, German, or Spanish, as having fulfilled the requirements with respect to language, must pass an examination to determine that they have fulfilled these requirements.

At or before the beginning of the Junior year each student is required to select work in two departments, in each of which he shall have obtained at least sixteen credits before graduation.

The last year of work required for the degree of Bachelor of Arts must be done in residence at the University of Cincinnati.

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* Science may be elected in the Sophomore year by Freshmen who are taking both Greek and Latin.

ELECTION OF STUDIES

The following courses are prescribed for all Freshman students in the College of Liberal Arts:

English 1	3 credit hours
Language	3 credit hours
*Science or Mathematics	5 credit hours
Physical Education	1 credit hour
Total	12 credit hours

The selection of the remainder of the work for the Freshman year is left to each student in conjunction with the Advisory Committee.

Subject to the restrictions noted under "Requirements for the Bachelor of Arts Degree," the department statements, and "Election of Studies," all studies are open to election.

In all laboratory courses two and one-half hours in the laboratory are considered as equivalent to one recitation hour and the preparation therefor. Without permission from the Dean, no student shall elect courses amounting to more than eighteen hours per week of University work, exclusive of the work in Physical Education.

Students who have satisfied the requirements for admission, but take less than twelve hours per week, are called "irregular students," and a tuition fee is charged in every instance. (See "Fees.") No student is permitted to elect courses in more than five departments in any one semester.

SPECIAL ARRANGEMENTS

Credit for Work Done in the College of Law.—A student who has received credit for the work of the first two years in the College of Liberal Arts may, in the third year, elect from four to six hours per semester of the lectures of the first year of the law course, as a substitute for studies in the College of Liberal Arts, and in the following year he may, in the same way, take the remainder of the thirteen hours of the first year's course in the College of Law. Or, if he so desires, he may elect, in his Senior year, the entire thirteen hours of the first year law course (equivalent to twenty-six credit hours in the College of Liberal Arts), provided he has fulfilled all the requirements for obtaining his B. A. degree. Thus a student may obtain both the academic and legal degrees in six years. In either of the above cases, the student will be classified as an irregular student in the College of Liberal Arts, and will be required to pay tuition at the regular rate of three dollars per credit hour per semester.

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* Freshmen who take both Greek and Latin will be permitted to take their science in the Sophomore year.

Seven-year Combined Collegiate and Medical Course.—A revised plan for a combined collegiate and medical course has been adopted, whereby a student may take both the degrees of Bachelor of Arts and Doctor of Medicine in seven instead of eight years. Students who desire to elect this course must first obtain permission to do so from the Dean of the College of Liberal Arts.

Six-Year Combined Collegiate and Medical Course.—In this combined course the student takes the first two years of work in the College of Liberal Arts, and the last four in the College of Medicine. At the end of six years he is granted the degrees of B. S. and M. D.

Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary.—Arrangements have been made with the Hebrew Union College and with Lane Theological Seminary, whereby students of these institutions who are pursuing a course in the University of Cincinnati may be allowed to count work in Hebrew taken in these institutions for the degree of Bachelor of Arts, to the amount of two hours a week throughout the Freshman and Sophomore years, and three hours a week throughout the Junior and Senior years, for the Hebrew Union College, and three hours per week for three years in Lane Theological Seminary, provided such work is regularly entered upon the election schedules of the University.

Credit for Work Done in the Art Academy of Cincinnati.—By an arrangement with the Art Academy of Cincinnati, students from the University may elect from the courses stated in the catalogue in drawing, modeling and carving, not more than six hours' work in any one semester, and receive credit therefor on the books of the University, provided these courses have been duly entered on the election blank and the proper certificate from the Director of the School is presented on their satisfactory completion. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

Credit for Work Done in the College for Teachers.—Certain courses in Education, to the number of twenty-four credits, may be elected by undergraduates during the Senior year and be counted toward fulfilling requirements for the A. B. degree.

COURSES OF INSTRUCTION

ASTRONOMY

JERMAIN GILDERSLEEVE PORTER, PH. D., Director of the Observatory and Professor of Astronomy.

For Undergraduates

1b. Descriptive Astronomy.—Lectures and class work. No mathematical training is required beyond a geometrical conception of the sphere and its circles. The object of the course is to give a comprehensive view of astronomy in its historic and practical relations, as well as a general résumé of our knowledge concerning the heavenly bodies. Reference books: *Popular Astronomy,* Newcomb; *Manual of Astronomy,* Young; *The Stars in Song and Legend,* Porter. M., F., 10:30—11:30, *second semester.* Professor Porter.

2a. General Astronomy.—Text-book: Young's *Manual of Astronomy.* W., 2:00-3:00, *first semester.* Professor Porter.

For Course 2a Trigonometry, Analytical Geometry, and Calculus will be required.

3b. General Astronomy.—Text-book: Young's *Manual of Astronomy.* W., 2:00-3:00, *second semester.* Professor Porter.

Course 3b is open only to those who have taken Course 2a.

For Undergraduates and Graduates

4a. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Text-book: Watson's *Theoretical Astronomy. First semester;* hours to be arranged.

Professor Porter.

5b. Computation of a parabolic orbit from three observations, and of an elliptic orbit with perturbations. Text-book: Watson's *Theoretical Astronomy. Second semester;* hours to be arranged.

Professor Porter.

Courses 4a and 5b are given at the Observatory.

BIBLICAL LITERATURE

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For Undergraduates and Graduates

8a. The Social Doctrine of Jesus.—A study of his teachings with regard to the nature of man, his individuality and responsibility; the family, rights of children, divorce; society, the method of its improvement; the state and our relations to it; wealth, the

rich and the poor, "the social question;" crime, criminals, and their treatment; non-resistance, peace and war, etc.

Subjects and references are given out and reports made, followed by lectures and discussions. *First semester,* two hours, to be arranged. ————.

8b. The Political and Social Institutions of the Ancient Hebrews in Relation to Modern Civilization.—A similar study. *Second semester,* two hours. ————.

BIOLOGY

* Harris Miller Benedict, A. M., ... Professor of Botany.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Cora May Box, A. M., ... Instructor in Zoology.
Vernon Lantis, A. M., ... Instructor in Botany.
Raphael Isaacs, A. M., ... Assistant in Embryology.
Robert T. Hance, ... Assistant in Zoology.
Assistant: Miss Nute.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students who expect to do advanced work in botany or zoology are advised to take general inorganic chemistry during their first year and organic chemistry during their second year, together with the courses in botany or zoology.

Students who desire to be recommended as teachers of botany or zoology in secondary schools must complete as a minimum, Courses 1a to 8b inclusive and Courses 15 and 35. It is very desirable that they also do at least one year of graduate work.

REQUIREMENTS FOR DEGREES

When a biological science is chosen as one major for the degree of Bachelor of Arts, the sixteen credits regarded as a minimum must be in zoology or in botany; that is, only one elementary course will be counted in these sixteen units.

To enter upon work for the degree of Master of Arts in zoology, students must have completed Courses 1a, 2a, 3b, 4b, 15, 17b, 18b, 19a, 13b, 14b, 20a, or their equivalents, while in botany the required preliminary Courses are 5a, 6a, 7b, 8b, 35, 24a, 25a, 26b, 27b, or their equivalents. Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts

* Absent on leave, first semester, 1913-14.

by students who elect their majors in other departments. When botany or zoology is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in Zoology or Botany.

For Undergraduates

1a. Animal Biology.—Lectures dealing with topics of a general biological nature, such as animal activities and adaptations, protoplasm, the cell, sex, development, etc. The course is intended to provide a thorough foundation for further work in zoology. This course must be accompanied by Course 2a. *First semester,* M., W., F., 9:30-10:30.
Assistant Professor Wieman.

2a. Animal Biology, Laboratory.—This course consists of the practical laboratory and field work which must accompany Course 1a. Certain animals, selected as types to illustrate general principles, are dissected and compared. Careful notes and drawings of all dissections are required. *First semester.*

Sec. 1, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.
Assistant Professor Wieman and Miss Box.

3b. General Zoology.—Lectures dealing in a comparative way with the various groups of animals, including life-histories, distribution, habits, adult anatomy, and classification. This course must be accompanied by Course 4b. *Second semester,* M., W., F., 9:30-10:30.
Assistant Professor Wieman.

Course 3b is open to students who have passed in Course 1a.

4b. General Zoology, Laboratory.—This course consists of the practical work which must accompany Course 3b. Careful dissections, drawings, and comparisons are required. *Second semester.*

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.
Assistant Professor Wieman and Miss Box.

5a. Plant Biology.—Lectures dealing with the physiology, ecology, and evolution of plants. The course is designed to give a general understanding of the factors which are operating in plant life, and to provide the proper foundation for the study of systematic botany. This course must be taken in conjunction with course 6a. *First semester,* M., W., F., 8:30-9:30. Mr. Lantis.

6a. Experimental Plant Biology.—This course consists of laboratory and field investigations of the physiology and ecology of selected plants and is designed to give the student a thorough working knowledge of the vital activities of plants and of the best methods for their

demonstration. Each student is required to keep a careful record in a note-book of the results of all physiological experiments and ecological observations, illustrating them with exact drawings. This course must be taken in connection with Course 5a. Sec. I, M., W., 1:00-4:00; Sec. II, T., Th., 1:00-4:00. Mr. Lantis and Miss Braun.

7b. General Botany.—Lectures on the structure, reproduction, and adaptation to environment of the plants of the various phyla of the plant kingdom, including short series of special lectures on "Bacteria and Disease" and "History and Value of Cultivated Plants." This course is designed to give a general knowledge of the different forms of plant life. It must be taken in connection with Course 8b. *Second semester,* M., W., F., 8:30-9:30. Professor Benedict.

8b. General Botany, Laboratory.—Thorough laboratory study of the structure of selected plants as examples of the different phyla of the plant kingdom, as well as carefully organized field trips for the purpose of learning to identify the commoner plants in their own habitats. This course must be taken in connection with Course 7b. Sec. I, M., W., 1:00-4:00; Sec. II, T., second semester, Th., 1:00-4:00. Professor Benedict and Mr. Lantis.

9. Sanitary Biology.—Lectures on the biological principles involved in sanitary engineering, designed to enable the engineer to solve local problems in sanitation and to appreciate the significance of specialists' reports. This course is also intended to give to both academic and engineering students an understanding of the comparatively recent biological discoveries which are revolutionizing the methods of preserving the public health. M., 2:00-3:00, throughout the year.

Course 9 is open to all students. Professor Benedict.

12b. Field Ornithology.—A field study of the identification, classification, songs, and habits of our native birds. One laboratory period per week during the second semester. Hours to be arranged. Professor Benedict.

35. Systematic Botany.—A course designed to give a working knowledge of the flora of this vicinity, comprising field trips followed by laboratory work in classification and in the preservation of plants, discussions on plant relationships and the preparation of "keys." The first semester will be devoted to the study of local Protophytes, Phycophytes, Carpophytes, Bryophytes, and Pteridophytes, while during the second semester the Spermatophytes will be worked on. T., Th., 9:30-12:30. Professor Benedict and Mr. Lantis.

Course 35 is open to students who have taken Courses 5 and 7, and under certain conditions to all Seniors. It is required of all who desire to be recommended as teachers of Biology or Nature-Study in secondary schools.

15. Invertebrate Zoology.—A laboratory course dealing with selected forms of Invertebrates. It is intended for students who desire a wider acquaintance with such forms than that afforded by the course in general zoology. Hours to be arranged. Miss Box.

Course 15 is open to students who have passed in Courses 1, 2, 3, and 4.

For Undergraduates and Graduates

19a. Embryology of Vertebrates.—The work consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 20. T., W., 1:00-2:00. Assistant Professor Chambers.

Course 19 is open to students who have passed in Courses 1, 2, 3, and 4.

20a. Embryology of Vertebrates, Laboratory.—Laboratory work to accompany Course 19. The work is based largely on the chick and pig. T., W., 2:00-5:00.

Assistant Professor Chambers and Mr. Isaacs.

Course 20 is open to students who have passed in Courses 1, 2, 3, and 4.

17b. Comparative Anatomy of Vertebrates.—Lectures on the anatomy, classification, habits, and distribution of vertebrates. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester,* T., Th., 1:00-2:00.

Assistant Professor Chambers.

Course 17b is open to students who have passed in Courses 19a and 20a. Omitted in 1913-14.

18b. Comparative Anatomy of Vertebrates, Laboratory.—The work consists in the careful dissection and study of selected forms. *Second semester,* T., Th., 2:00-5:00.

Omitted in 1913-14. Assistant Professor Chambers.

13b. Animal Physiology.—Lectures dealing with fundamental physiological phenomena of animal life. This course must be accompanied by Course 14b. *Second semester,* T., Th., 1:00-2:00.

Assistant Professor Chambers.

Course 13b is open to students who have passed in Courses 1, 2, 3 and 4.

14b. Animal Physiology Laboratory.—Experiments on different organisms selected for the study of physiological activities, such as irritability, conductivity, reproduction, tropisms, etc. *Second semester,* T., Th., 2:00-5:00. Assistant Professor Chambers.

Courses 13b and 14b alternate with Courses 17b and 18b. Courses 13b and 14b are given in 1913-14.

10a. Microscopical Technique.—The course includes the preparation and use of standard fixing and staining agents, and drill in the manipulative processes incident to general microscopy and cytology. *First semester,* M., W., 1:00-4:00.

Assistant Professor Wieman.

Course 10a is open to students who have passed in Courses 19a and 20a.

10b. Cytology.—A laboratory course intended to serve as an introduction to cytology and the general field of cellular biology. *Second semester,* M., W., 1:00-4:00.

Assistant Professor Wieman.

Course 10b is open to students who have passed in Course 10a.

21. Histology and Organology.—This course belongs to the Department of Anatomy of the Medical College. It is numbered 2 in the catalogue of the Medical College, and is open to academic students who are taking or have taken Courses 19a and 20a. See catalogue of Medical College for full description of this course and others open to academic students. M., W., 8:30-11:30.

Assistant Professor Chambers.

23. Field Work.—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each student is assigned a special problem. The work may be taken as a two or a three-hour course. Hours to be arranged.

Professor Benedict.

Course 23 is open to only those students who have passed in the elementary courses in botany.

24a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester,* T., 10:30-11:30.

Professor Benedict.

Course 24a is open to students who have passed in Courses 5a, 6a, 7b, 8b.

Omitted in 1913-14.

25a. Plant Histology, Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawing and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester,* T., Th., 8:30-11:30.

Omitted in 1913-14. Professor Benedict.

26b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester,* T., 10:30-11:30. Professor Benedict.

Course 26b is open to students who have passed in Courses 24a and 25a.

27b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 26b. *Second semester,* T., Th., 8:30-11:30. Professor Benedict.

40. Current Problems in Botany.—Lectures, assigned readings, and discussions upon present problems in plant physiology and cytology. A reading knowledge of French or German is required. Two credit hours. *Second semester.* Professor Benedict.

Course 40 is open to students who have passed in Courses 5a, 6a, 7b, 8b, 24a, 25a, 26b, 27b, and 35.

Primarily for Graduates

30. Current Problems in Zoology.—Assigned readings and discussions to accompany courses of research. Heredity is the topic for 1913-14. A reading knowledge of French and German is required. Two credit hours. Assistant Professor Wieman.

31. Research.—Hours to be arranged.
Professor Benedict, Assistant Professor Wieman, and Assistant Professor Chambers.

Evening Course

50. Principles of Animal Biology.—A lecture and laboratory course. The lectures deal with general biological topics, such as animal organization, physiology, adaptation, heredity, and evolution. In the laboratory certain animals selected as types are dissected and compared. Lecture, F., 7:30-9:30; Laboratory, Th., 7:30-9:30.
Assistant Professor Wieman and Mr. Isaacs.

CHEMISTRY

LAUDER WILLIAM JONES, PH. D., ... Professor of Chemistry.
HARRY SHIPLEY FRY, PH. D., . Associate Professor of Chemistry.
HENRY MAX GOETTSCH, PH. D., Assistant Professor of Industrial Chemistry.
EDWARD B. REEMELIN, A. B., M. D., Assistant Professor of Physiological Chemistry.
JAMES ASTON, Ch. E., ... Assistant Professor of Metallurgy.
CLARENCE A. NASH, A. M., . . Instructor in Physical Chemistry.
EDWIN W. ESSLINGER, A. M., . Instructor in Analytical Chemistry.

ASSISTANTS: Mr. Hecker, Mr. Merrill and Miss Neuffer.

For Undergraduates

1a. General Inorganic Chemistry.—The Non-metals. It is the object of this course to give a definite idea of the fundamental laws of general chemistry, and, in a connected way, to furnish a survey of the important facts concerning the chemistry of the non-metals and their compounds. The subject-matter discussed in the combined lectures, recitations, and quizzes is illustrated amply by experiments, charts, and specimens. Course 2a forms an integral part of, and must accompany Course 1a. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

2a. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week during the first semester. Each student will perform a series of experiments complementary to the subject-matter of Course 1a.

Sec I, T., Th., 1:00-4:00.

Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

3b. General Inorganic Chemistry.—The Metals. This course is a continuation of Course 1a and will consider chiefly the properties of the metals and their compounds. Three hours per week during the second semester. Students who have completed Courses 1a and 2a are eligible for this course. It must be accompanied by Course 4b. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

4b. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week during the second semester. A series of experiments complementary to the subject-matter of Course 3b.

Sec. I, T., Th., 1:00-4:00.

Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

5a. Qualitative Analysis.—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis

will be laid upon the application of the laws of chemical equilibrium, and the theories of solution and of electrolytic dissociation to the practical problems of the analyst. Three exercises a week during the first semester. M., W., F., 8:30-9:30. Professor Jones.

Prerequisite: Courses 3b and 4b.

6. Qualitative Analysis, Laboratory.—This course must accompany Course 5a. During the first few weeks of the semester the student will perform the most important tests commonly used in the processes of analytical chemistry. The later work of the course will furnish abundant training in the qualitative examination of salts, minerals, alloys, etc. Two exercises a week during the first semester; two laboratory periods and one quiz period during the second semester. T., Th., 1:00-4:00. Professor Jones and Mr. Esslinger.

7b. Quantitative Analysis.—An introductory laboratory course in gravimetric and volumetric analysis. Occasional conferences are held, at which analytical methods and calculations are discussed, and at which reports are submitted covering assigned reading. Three exercises a week during the second semester. M., W., F., 1:00-4:00.

Prerequisite: Courses 5a and 6 (first semester). Mr. Esslinger.

8a. Elementary Organic Chemistry.—Three exercises a week during the first semester. The course comprises quizzes and lectures which are experimental to a certain extent, and deals with the chief classes of organic compounds of both the aliphatic and aromatic series. This course is arranged to meet the needs of those who intend to specialize in chemistry, in medicine, or in biology. It serves as a general introduction for those who intend to go deeper into the study of organic chemistry. M., W., F., 11:30-12:30.

Prerequisite: Courses 3b and 4b. Professor Jones.

9a. Organic Reactions and Preparations.—A course of laboratory practice, arranged to accompany the lectures of Course 8a. A number of simple organic substances are made, with the view to furnishing, by the fewest illustrations possible, the largest variety of typical reactions and manipulations. M., W., 1:00-4:00.

Professor Jones, assisted by Dr. Reemelin.

Prerequisite: Courses 3b and 4b.

14b. Metallurgy.—Five credit hours per week during the second semester. The course embraces the study of fuels, refractories, ferrous and non-ferrous metallurgy, and practice in metallurgical calculations. Especial emphasis is laid upon foundry and steel works processes. Excursions will be made to metallurgical establishments in Cincinnati and vicinity. M., T., W., Th., 9:30-10:30; M., 1:00-4:00. Assistant Professor Aston.

Prerequisite: Courses 5a, 6, and Physics 1.

15b. Assaying.—One afternoon a week during the second semester. The course consists in laboratory practice in the fire assay of ores and base metals for gold, silver, and lead. Hours to be arranged.

Prerequisite: Course 7b. Assistant Professor Aston.

16a. Technical Inorganic Chemistry.—Three periods a week during the first semester. Lectures and recitations upon important inorganic chemical industries. For information concerning the details of this course, consult the Announcement of the College of Engineering. M., W., F., 9:30-10:30. Assistant Professor Goettsch.

Prerequisite: Courses 5a and 6.

17. Technical Analysis.—The course consists of analyses of typical industrial products. Use will be made of gravimetric, volumetric, gasometric, electrolytic, and colorimetric processes. The laboratory is well equipped with instruments of precision, such as polariscopes, refractometers, colorimeters, specific gravity balances, calorimeters, and other apparatus for rapid determinations by physical means. The aim is not so much at analyzing a large variety of products, as to study typical methods of analysis. The determinations to be made may be varied to suit individual needs. Some of the topics covered in the past have been analyses of fuel, cement, ores, iron and steel, water, gas, fertilizers, soaps, and food. T., Th., F., 1:00-4:00.

Assistant Professor Goettsch, assisted by Mr. Esslinger.

Prerequisite: Course 7b.

18b. Technical Organic Chemistry.—Three periods a week during the second semester. A continuation of Course 16a. Lectures and recitations upon selected organic chemical industries. M., W., F., 8:30-9:30. Assistant Professor Goettsch.

Prerequisite: Courses 8a, 9a, and 16a.

29a. Practical Photography.—One lecture and one laboratory period a week during the first semester. The course embraces a study of the exposure and development of photographic plates; the treatment of defective negatives; the preparation and use of various printing papers; copying, enlarging, and lantern-slide making. W., 8:30-9:30; F., 1:00-4:00. Assistant Professor Goettsch.

Prerequisites: 1a, 2a, 3b, and 4b.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. In this course some of the special topics and recent theories of inorganic chemistry are considered. The topics include: colloids, reactions in non-aqueous solvents; inactive gases; radioactive elements and emanations; the electron; valence, structure, and co-ordination theories. T., Th., 8:30-9:30.

Associate Professor Fry.

Prerequisite: Courses 5a, 6, and 7b.

11a. Inorganic Preparations.—Three laboratory exercises a week during the first semester. Preparation of inorganic compounds and experiments supplementary to the subject matter of Course 10a. Hours to be arranged. Associate Professor Fry.

Prerequisite: Course 7b.

12a. Physical Chemistry.—Lectures and recitations. Three exercises a week, throughout the first semester. An introductory course which considers the general properties of gases, liquids, solids and solutions, as well as the principles determining reaction velocity and the equilibria in homogeneous and heterogeneous systems. T., Th., S., 11:30-12:30.

Prerequisite: Chemistry 5a, 6a, and 7b, Physics 26a and 27b, Mathematics 5. Mr. Nash.

13a. Physical Chemistry, Laboratory.—Two exercises a week, throughout the first semester. This course is designed to illustrate the principles developed in Course 12a, and to provide a working knowledge of the common methods used in physical-chemical measurements. This course must accompany Course 12a. Th., F., 1:00-4:00. Mr. Nash.

32b. Electrochemistry.—Lectures and recitations. Three exercises a week throughout the second semester. A general consideration of the electrical properties of matter with special reference to the theory of aqueous solutions. M., W., F., 11:30-12:30.

Prerequisite: 12a. Mr. Nash.

33b. Electrochemistry, Laboratory.—Two exercises a week throughout the second semester. This course will illustrate the principles and methods of electrochemical measurements: Determination of conductivity with its application, transference numbers, electromotive force, dielectric constant, etc. Th., F., 1:00-4:00. This course accompanies Course 32b. Mr. Nash.

34a. Thermodynamics Applied to Chemistry.—Two exercises a week throughout the first semester. The course will be devoted to an elementary consideration of the principles of thermodynamics and their application to physical-chemical problems. The work will be illustrated by the solution of many numerical examples. Hours to be arranged. Mr. Nash.

Prerequisite: Courses 12a and 32b.

Omitted in 1912-13.

41a. Phase Rule.—Lectures and recitations. A study of the phase rule and its applications. Two exercises a week during the first semester. Hours to be arranged. Mr. Nash.

Prerequisite: Course 12a.

20. Advanced Organic Chemistry.—Three lectures and conferences a week, embracing a systematic study of the principles and practices of organic chemistry, and treating of the modes of formation, properties, reactions, and constitutional formulae of typical members of the most important classes of organic compounds. Hours to be arranged. Professor Jones.

Prerequisite: Courses 5a, 6, 7b, 8a, 9a, and a reading knowledge of German and French.

21. Advanced Organic Chemistry, Laboratory.—Practice in the preparation of a number of typical organic compounds. This course will require considerable reading in the journals of chemistry and in various hand-books and works of reference. Hours to be arranged.

Prerequisite: As in Course 20b. Professor Jones.

22b. Bio-Chemistry.—Among other subjects, the course will take up for discussion the nature of carbohydrates, fats, and protein substances; the facts and theories relating to the processes of digestion and metabolism; the chemical composition of the body tissues, secretions, and excretions, including the methods employed in their analysis. *Second semester,* M., W., F., 11:30-12:30.

Assistant Professor Reemelin.

Prerequisite: Courses 8a and 9a.

22b. Bio-Chemistry, Laboratory.—Laboratory exercises arranged to accompany the lectures, and to acquaint the student with the distinctive reactions of carbohydrates, fats, and protein substances. The student will be expected to learn the application of these tests to the qualitative detection of, and the quantitative estimation of, these substances in body tissues, secretions, and excretions. Digestion, the analysis of gastric and fecal matter and of urine will be considered from the chemical point of view. *Second semester,* M., W., F., 1:00-4:00. Assistant Professor Reemelin.

Prerequisite: Courses 8a and 9a.

24b. History of Chemistry.—This course embraces a review of the various hypotheses concerning the ultimate constitution of matter, and considers the development of the fundamental laws of the science of chemistry. Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. Three exercises per week during the second semester. Hours to be arranged. Associate Professor Fry.

Prerequisite: 5a, 6, 8a and 9a, or 20b and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and elec-

tric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two laboratory periods a week during the second semester; hours to be arranged.

Professor Jones.

Prerequisite: 5a, 6, 8a, and 9a; Physics, 1 year.

Primarily for Graduates

30. Research.—This course requires intensive laboratory work under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d).

Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch, Assistant Professor Aston.

During the summer of 1913, students engaged in research may enroll in the Graduate School.

35b. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration are chosen from the following: Optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; tautomerism; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpenes; the polypeptides, proteins; the organic dyes, etc. *Second semester.* Two hours a week, to be arranged.

Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Commerce.

——— ———, ... Instructor in Economics.

Students desiring a general knowledge of economics are recommended to take Course 1 or Courses 1 and 2. Courses 11, 12a, and 13b are required of students taking a major in economics.

For Undergraduates

1. Economics.—This course is intended to give the student a general view of the subject. It includes a study of (1) the elements of economics: wealth, value, price, competition, monopolization, production, and distribution; (2) the evolution of industry from local organization and control during the middle ages, through nationalism and the industrial revolution, to modern conditions; and (3) the leading economic problems of today. Lecture, W., 11:30-12:30; Sec. I (for men), M., 11:30-12:30; Sec. II (for women), F., 11:30-12:30. Professor Hicks.

2. Economic History.—A study of industrial development since the tenth century, including the economic history of the United States. Subjects considered: the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times. Sec. I, T., Th., 11:30-12:30.
Mr. ————.

For Undergraduates and Graduates

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist mainly of a comparison of the views of representative economists. T., Th., 9:30-10:30. Professor Hicks.

Course 11 is open to students who have completed Courses 1 and 2 and to others by special permission.

12a. Industrial Evolution.—An analysis of the modern economic system and a study of its development from earlier forms of industry. W., F., 9:30-10:30. Professor Hicks.

Course 12 must be preceded or accompanied by Course 11.

13b. Applied Economics.—The application of economic principles to leading problems, such as socialism, land nationalization, labor, trusts, money, transportation, and the tariff. W., F., 9:30-10:30. Professor Hicks.

Course 13 must be preceded by Course 12a.

14. Seminary.—For the detailed study of special problems. Credit according to number of hours elected.

Omitted in 1913-14.

Evening Courses

1. Economics (See above).—Sec. III. W., 7:30-9:30.
Professor Hicks.
2. Economic History (See above).—Sec. II. Th., 7:30-9:30.
Mr. ————.

30. Commercial Geography.—W., 4:45-6:45.
Mr. ————.

31. Elements of Statistics.—T., 4:45-6:45.
Mr. ————.

6. Commercial Geography.—A study of the leading articles of commerce, including both raw materials and manufactured products, their character and relative importance, the principal sources of supply, and their distribution in the world's markets. W., 4:45-6:45.
————.

7. Statistics.—The principles of the statistical method and their application to social and economic problems. M., 4:45-6:45.
————.

EDUCATION

William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education.
John William Hall, A. M., Professor of Elementary Education.
Henry Skinner West, Ph. D., Professor of Secondary Education.
Cyrus De Witt Mead, A. M., Assistant Professor of Elementary Education.
Abbie Louise Day, B. S., . . Instructor in Elementary Education.

The following courses may be elected by undergraduates during the Senior year, and be counted toward fulfilling requirements for the A. B. degree in the McMicken College of Liberal Arts.

1. History and Principles of Education.—6 credits. M., W., F., 10:30-11:30. Professor Burris.

2. Theory and Practice of Teaching.—8 credits. Three hours class-room work and fifteen hours of practice per semester. Hours for practice to be arranged before registration. M., W., F., 9:30-10:30. Professor Hall.

4. School Economy.—2 credits. F., 11:30-12:30. Miss Day.

14. The Teaching of English.—4 credits. M., W., 8:30-9:30. Miss Day.

16. The Teaching of History.—2 credits. F., 8:30-9:30. Assistant Professor Mead.

20. The Teaching of Mathematics.—2 credits. *Second semester,* M., W., 11:30-12:30. Assistant Professor Mead.

22. The Teaching of Geography.—2 credits. *First semester,* M., W., 11:30-12:30. Assistant Professor Mead.

Prerequisite Courses:

Psychology 1a and 1b.

Philosophy 5a.

Geology and Geography 1.

History 15. (For those who did not offer a year's work in American history for admission.)

Education Courses 1, 2 and 4, and eight credits for work elected in Courses 14, 16, 20, and 22, making a total of twenty-four credits, entitle the graduate to a Teacher's Diploma, conferred by the College for Teachers, and a place on the preferred list of those eligible to appointment in the Cincinnati schools.

Students may count Education as one of the two departments in each of which they are required to obtain at least sixteen credits for graduation.

Students who take Education with a view of obtaining a Teacher's Diploma should invariably consult with the Dean of the College for Teachers before registration. They will be required, in case of doubt, to give satisfactory evidence of physical qualifications for the work of teaching.

For further information, including statements in detail concerning the requirements of professional programs for those who wish to prepare for various positions in educational work, see announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

FRANK WADLEIGH CHANDLER, PH. D., Professor of English and Ropes Professor of Comparative Literature.
GEORGE MOREY MILLER, PH. D., Associate Professor of English.
EMILIE WATTS McVEA, A. M., Assistant Professor of English.
BENJAMIN CARLTON VAN WYE, A. M., Assistant Professor of Public Speaking and of English.
CLYDE WILLIAM PARK, A. M., . . Assistant Professor of English.
BERTHA K. YOUNG, A. M., . . . Assistant Professor of English.

All students in English, before making their election of courses, are advised to consult with some member of the department, and to read carefully the departmental bulletin of information as to the proper sequence in which such courses should be taken.

No student should enter or withdraw from a two-semester course at the beginning of the second semester without first consulting both the instructor concerned and the head of the department.

Students majoring in English are required to do 16 credits of English work over and above the University credits allowed them for English 1, 2, 3, and 25; but English 1 and 3 (10 credits) are prerequisites for entering upon the work of the major in English, and students so majoring must also take as part of their course either 7a (with 8b) or 10.

For Undergraduates

1. English Composition.—This course presents a general survey of the principles of English composition and endeavors to enforce them by practice in writing. A certain amount of reading in English literature is also required.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, T., Th., S., 8:30-9:30.
Sec. III, M., W., F., 10:30-11:30.
Sec. IV, M., W., F., 10:30-11:30.
Sec. V, M., W., F., 1:00-2:00.
Sec. VI, M., W., F., 1:00-2:00.

Associate Professor Miller, Assistant Professors McVea, Van Wye, Park, and Young.

Course 1 is required for all students in the College of Liberal Arts in the Freshman year. It cannot be counted towards a major in English.

2a. Argumentation.—*First semester,* T., Th., 8:30-9:30.
Assistant Professor Van Wye.

2b. Description and Narration.—*Second semester,* T., Th., 8:30-9:30. Associate Professor Miller.

Omitted in 1913-14.

Courses 2a and 2b are recommended for Sophomores, but cannot be counted towards a major in English.

3. Types of Literature.—An appreciative rather than an historical study of the principal literary kinds—lyric, narrative verse, drama, prose fiction, and essay—illustrated by readings in representative masterpieces, chiefly English. Lectures, class papers, discussions. T., Th., 9:30-10:30. Professor Chandler.

Course 3 is recommended for Freshmen and Sophomores only. It is a prerequisite for all students who wish to major in English, but cannot be counted toward that major.

4. Nineteenth Century Prose.—Studies in the thought and style of the great prose writers, other than novelists, from Coleridge to Carlyle (during the first semester), and from Emerson to Pater (during the second semester). M., W., F., 10:30-11:30.
Assistant Professor Young.

Course 4 is recommended for Juniors and Seniors.

5. Shakespeare.—A study of the life and times of Shakespeare, his dramatic methods, and the literary history of his plays. Some of the plays are examined in detail, and most of the others are assigned for reading. M., W., F., 9:30-10:30.

Assistant Professor Young.

Course 5 is recommended for Sophomores.

6. Victorian Poetry.—A study of the poetical works of Tennyson, Browning, Arnold, Rossetti, and Swinburne, involving a discussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.

Professor Chandler.

Course 6 is recommended for Juniors and Seniors.

11. The English Novel.—This course considers the origin and history of the English novel, and discusses its characteristics as a form of prose literature. T., Th., 9:30-10:30.

Omitted in 1913-14. Associate Professor Miller.

16. Wordsworth and His Contemporaries.—A study of the English romantic poets of the early nineteenth century—Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats—involving a discussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.

Omitted in 1913-14. Professor Chandler.

Course 16 is recommended for Juniors and Seniors.

18. American Literature.—Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, and some of their contemporaries. T., Th., 1:00-2:00. Assistant Professor McVea.

25. Public Speaking.—Control of the voice and body, correct enunciation, and practice in effective expression.

Sec. I, T., Th., 10:30-11:30.

Sec. II, T., Th., 11:30-12:30.

Assistant Professor Van Wye.

Course 25 counts as only one University credit for each semester. It is recommended for students who expect to take Course 13, but it cannot be counted toward a major in English.

13. Forms of Public Address.—This course is intended to serve as an introduction to debating and as a preparation for effective public speaking. T., 1:00-3:00.

Assistant Professor Van Wye.

Course 13 is open to students who have passed creditably in Course 1 and Course 2a. It is recommended for Seniors who are candidates for the Jones prizes.

26a. The Essay.—A consideration of the origin and history of the English essay, involving a study of the rise of periodical literature and some reading of foreign examples of the type. *First semester,* M., W., F., 1:00-2:00. Assistant Professor Park.

For Undergraduates and Graduates

7a. Old English Prose.—An elementary reading course in Old English. *First semester,* T., Th., S., 8:30-9:30.

Assistant Professor Young.

Either Course 7a or Course 10 (Chaucer) is required of all students who choose English as a major subject. Those who elect Course 7a must also elect either Course 8b or Course 9b.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester,* T., Th., S., 8:30-9:30.

Assistant Professor Young.

9b. Early Middle English.—A study of the development of the English language and its literature from the Norman Conquest to the Age of Chaucer, with especial emphasis upon the flourishing of romance. *Second semester,* T., Th., S., 8:30-9:30.

Omitted in 1913-14. Assistant Professor Young.

10. Chaucer.—The work and influence of Chaucer: his times, sources, contemporaries, and immediate successors, studied chiefly from the literary point of view. M., W., F., 11:30-12:30.

Associate Professor Miller.

Either Course 10 or Course 7a (Old English) is required of all students who choose English as a major subject. Those who elect Course 7a must also elect Course 8b or Course 9b.

12. Literary Composition.—This course considers the various prose literary forms from the point of view of original composition. Only those students are admitted to the course who satisfy the instructor of their ability to write well. T., Th., 11:30-12:30.

Assistant Professor McVea.

14. The English Drama before Shakespeare.—This course considers the origins of the English drama and its earlier manifestations in miracle plays, moralities, and interludes, as well as the regular drama to the death of Marlowe. M., W., F., 9:30-10:30.

Omitted in 1913-14. Associate Professor Miller.

15. The English Drama from the Death of Marlowe to 1642.—A study of Shakespeare's contemporaries and immediate successors in the development of the drama. M., W., F., 9:30-10:30.

Associate Professor Miller.

27. English Drama Since the Restoration.—A study of the development of the drama in England during the eighteenth and nineteenth centuries, with some attention to its foreign relations. M., W., F., 1:00-2:00. Assistant Professor Park.

Omitted in 1913-14.

19a. The English and Scottish Popular Ballads—A study of the characteristics of folk-poetry and of the origin and development of the popular ballad. *First semester,* T., Th., 1:00-2:00.
Omitted in 1913-14. Associate Professor Miller.

21. English Poetry from Spenser to Burns.—A study of the development of English poetry, exclusive of the drama, from the beginning of the Elizabethan Age through the eras of Milton and Pope to the close of the eighteenth century. T., Th., 9:30-10:30.
Associate Professor Miller.

22. Foreign Backgrounds of English Literature.—An introduction to the literature of modern Europe, presenting a general survey of some of the more important works and tendencies since the Renaissance, with particular stress upon such as have proved influential in England. T., Th., 2:00-3:00. Professor Chandler.

23. The Literary Movement of the Eighteenth Century.—A detailed study of the characteristics of romanticism and of their manifestation in the literature of England, France, and Germany, prior to the culmination of the movement in the early nineteenth century. W., 4:00-6:00. Professor Chandler.
Omitted in 1913-14.

24. Recent European Drama.—A study of the new dramatic literature, its varieties, technic, aims, and problems, beginning with the later plays of Ibsen, and considering the art and thought of such other representative writers for the stage as Björnson, Hauptmann, Sudermann, Schnitzler, Maeterlinck, Hervieu, Rostand, D'Annunzio, Echegaray, Strindberg, Tchekov, Pinero, Jones, Phillips, Synge, and Shaw. W., 4:00-6:00. Professor Chandler.

For Graduates Only

20. Seminary.—Studies in Literary Theory.—An examination of the principal theories of literature considered historically and philosophically. The later portion of the course will be devoted to the investigation of special problems in literary criticism. T., 3:30-5:30. Professor Chandler.

For Teachers

For courses available for teachers see Courses 24 and 20, the evening courses, and Course 29, described below.

29. Materials and Methods in Secondary English.—The organization and adaptation of the work in composition and literature to meet the needs of pupils in the secondary schools. A course designed for (1) seniors and graduates intending to teach English in secondary schools, (2) teachers in elementary schools preparing

to teach secondary English, and (3) teachers in secondary schools already engaged in the teaching of English. S., 9:30-11:30.

Associate Professor Miller.

Evening Courses

30. English Composition.
Sec. I, Th., 7:30-9:30. Assistant Professor Park.
Sec. II, hours to be arranged. Associate Professor Miller.

31. Nineteenth Century Prose.
Omitted in 1913-14. Assistant Professor Young.

32. Shakespeare. M., 7:30-9:30.
Assistant Professor Young.

33. Public Speaking. T., 7:30-9:30.
Assistant Professor Van Wye.

GEOLOGY AND GEOGRAPHY

Nevin M. Fenneman, Ph. D., Professor of Geology and Geography.
J. Ernest Carman, B. S., . . . Assistant Professor of Geology.
——— ———, ... Instructor in Engineering Geology.
Walter H. Bucher, Ph. D., ... Assistant in Geology.

For Undergraduates

1. An introductory study of minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean; followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, M., W., 2:00-4:30; T., Th., 9:30-12:00; T., Th., 2:00-4:30; T., Th., 1:00-3:30.

Professor Fenneman and Dr. Bucher.

2. General Geology.—This course is primarily for co-operative engineering students, but Liberal Arts students will also be admitted. An introductory study of minerals and rocks, dynamic geology and topography, followed in the second semester by stratigraphic, structural, and economic geology. Five hours, to be announced.

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9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure; special attention given to the economic deposits of each period. Frequent local (half-day) excursions noting fossils, stratigraphy, physiography, and economic relations. Lectures, T., Th., 8:30-9:30; Laboratory, M., 2:00-4:30. Course 1 is prerequisite.

Assistant Professor Carman.

Geology 9 is accepted as graduate work by agreement with the professor in charge.

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit according to number of hours elected. Course 1 is prerequisite.

Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Three hours, to be announced. ——— ———.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized. Three hours, to be announced. Assistant Professor Carman.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Two or three hours, to be announced. Course 7 is prerequisite. ————.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to number of hours elected.

14. Course 14 is outlined under the heading "For Teachers." Open to college students only by special agreement with the professor in charge.

16. Course 16 is outlined under the heading "For Teachers."

For Teachers

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lecture, S., 8:30-10:30. Field or Laboratory, 10:30-12:50. Professor Fenneman.

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* Course I is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major unless Course 1 or its equivalent has been taken.

16. Advanced Physiography of the United States.—Course 1 (or Course 14) and Course 9 are prerequisite. Lecture, M., 4:00-6:00; W., 4:00-5:00. Professor Fenneman.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

Course 9 is also given to teachers who have had Course 14. Lecture, S., 8:30-10:30; Field or Laboratory, 10:30-12:50.

Assistant Professor Carman.

Evening Course

18. Elementary Geology.—Equivalent to the first half of Course 1, but treating certain subjects more fully. Lecture, T., 7:30-9:30; laboratory, Th., 7:30-9:30.

Assistant Professor Carman and ————.

GERMAN

Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Claude M. Lotspeich, Ph. D., . Assistant Professor of German.
Eleanor Nippert, A. B., ... Instructor in German.
Martin Ludwich, M. E., ... Instructor in German.

Assistant: Emma Andriessen, A. M.

For Undergraduates

1. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 11:30-12:30.
Sec. III, M., W., F., 1:00-2:00.

Assistant Professor Lotspeich and Miss Nippert.

Course 1 is open to students who have had no German in the high school.

2. German Prose and Poetry.—Reading at sight, grammar, composition, and dictation.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, M., W., F., 10:30-11:30.
Sec. III, M., W., F., 11:30-12:30.

Assistant Professor Lotspeich and Miss Nippert.

Course 2 is open to students who have passed in Course 1 or who have had two years of German in the high school.

Course 2 does not count towards a major in German.

20. German Scientific Prose.—Subjects in natural science. T., Th., 11:30-12:30. Assistant Professor Lotspeich.

Course 20 is open to students who have passed in Course 1 or its equivalent. Course 20 does not count towards a major in German. If taken after Course 2, Course 20 will count only as a half course.

3. German Composition (Beginners' Course).—German grammar, conversation, and practice in writing German. T., Th., 10:30-11:30. Miss Nippert.

Course 3 is open to students who have passed in Course 1. Courses 2 and 3 may be advantageously taken together.

**4. Introduction to German Literature of the Eighteenth Century.—Lessing's *Emilia Galotti,* Schiller's *Jungfrau von Orleans* and *Maria Stuart,* Goethe's *Iphigenie, Egmont, Tasso* and *Goetz von Berlichingen.* Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted mainly in German.

Sec. I, M., W., F., 10:30-11:30.
Sec. II, M., W., F., 9:30-10:30.
Professor Poll, Miss Nippert, and Assistant.

Course 4 is open to students who have passed in Course 2. Students in this course are urged to take a composition course in addition.

21. German Composition (Intermediate Course).—Practice in composition, conversation and in writing German. T., Th., 9:30-10:30. Miss Nippert.

Courses 4 and 21 may be advantageously taken together.

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1913-14: *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll and Assistant.

Course 5 is open to students who have passed in Course 4.

** Students entering the University who have done advanced work in German may anticipate this course by passing an examination on the work as outlined above, within three weeks after matriculation.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00.
Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 9:30-11:30.
Professor Poll.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30.
Omitted in 1913-14. Professor Poll.

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—Collateral reading and written reports. T., 4:00-6:00.
Professor Poll.

Course 12 is open to students who have passed in Course 5.

11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. *Second semester,* T., 4:00-6:00. Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.
Omitted in 1913-14.

7. Middle High German—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. M., 4:00-6:00.
Omitted in 1913-14. Assistant Professor Lotspeich.

8. Old High German.—Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as textbooks. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00.
Assistant Professor Lotspeich.

13. Gothic.—Braune's *Gotische Grammatik;* reading of selections from Ulfilas, lectures on Germanic philology. W., 4:00-6:00.
Omitted in 1913-14. Assistant Professor Lotspeich.

26. Old Norse.—Kahle's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00.
Assistant Professor Lotspeich.

9b. German Seminary.—Willem's *Van den vos Reinaerde. Second semester.* T., 4:00-6:00. Professor Poll.
Omitted in 1913-14.

For Teachers

Courses 10 and 30, outlined above, are intended primarily for teachers.

Evening Courses

33. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German. W., 7:30-9:30. Mr. Ludwich.

34. Advanced German, Prose and Poetry.—Translation, sight reading, grammar, composition, dictation. T., 7:30-9:30. Assistant Professor Lotspeich.

35. Introduction to German Literature of the Eighteenth Century.—Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted in German. W., 7:30-9:30. Professor Poll.

GREEK

JOSEPH EDWARD HARRY, PH. D., ... Professor of Greek.
ARTHUR JAMES KINSELLA, A. M., ... Instructor in Greek.

For Undergraduates

1. Oratory—Epic Poetry—Philosophy.—Lysias, six orations; Herodotus, one book; *Iliad,* Books XIX-XXII.

The Lyric Poets.—Selections. Plato: *Protagoras; Lysis; Laches; Charmides.* Collateral reading: two orations of Lysias; two books of the *Iliad;* Plato's *Apology* and *Crito.* M., W., F., 9:30-10:30, throughout the year. Professor Harry.

A collateral course is offered by Mr. Kinsella for those students who are unable to attend at this hour.

2. Greek Prose Composition.—M., 10:30-11:30, throughout the year. Mr. Kinsella.

Course 2 should be taken in connection with Course 1.

3. The Drama.—Euripides, *Hippolytus;* Sophocles, *Oedipus Tyrannus;* Aeschylus, *Prometheus;* Aristophanes, *Nubes.* Collateral reading—Euripides: *Alcestis, Ion.* M., W., F., 10:30-11:30, throughout the year. Professor Harry.

Course 3 is open to students who have completed Course 1.

4. The Odyssey.—Two hours weekly; to be arranged. Mr. Kinsella.

8. The Life and the Literature of the Ancient Greeks.—Greek Life, *first semester.* Homer, *second semester.* Th., 10:30-11:30. Professor Harry.

Students who are not acquainted with the Greek language may be admitted to Course 8.

9. Elementary Greek.—First Greek book and grammar. Xenophon. M., W., F., 9:30-10:30. Mr. Kinsella.

10. The New Testament.—A course in grammar and translation. Two hours or more; to be arranged with the instructor. Throughout the year. Mr. Kinsella.

Course 10 alternates with Course 16.

Omitted in 1913-14.

11. Advanced Course in the Greek Drama.—*Iphigenia, Antigone, Agamemnon, Aves, Ranae.* M., W., F., 10:30-11:30.

Omitted in 1913-14. Professor Harry.

12. Xenophon's *Hellenica, first semester. Symposium, Memorabilia, second semester.* T., Th., 10:30-11:30. Mr. Kinsella.

15. Intermediate Greek.—Prose Composition. Homer, I-III. M., W., F., 11:30-12:30. Mr. Kinsella.

16. Hellenistic Greek.—Philo and other writers of this period. Two hours throughout the year; to be arranged with the instructor.

Course 16 alternates with Course 10. Mr. Kinsella.

17. First Year Greek.—T., Th., S., 11:30-12:30.

Professor Harry.

18. Advanced Course in Greek Drama.—*Bacchae, Ajax, Vespae, Pax.* M., W., F., 10:30-11:30. Mr. Kinsella.

Course 18 alternates with Course 11.

20b. Greek Mythology.—A lecture course with collateral reading. T., Th., 9:30-10:30. Mr. Kinsella.

Students who are not acquainted with the Greek language may be admitted to Course 20b.

For Undergraduates and Graduates

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Pre-Hellenic archaeology, Greek architecture, and sculpture (1913-14); vase paintings, coins, gem engraving, wall paintings (1912-13). T., 10:30-11:30.

This class is limited to forty students. Professor Harry.

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.

Professor Harry.

7. Greek Seminary.—Aristophanes (1912-13); Homer (1913-14). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

For Teachers

19. Teachers' Course in Xenophon and Homer. S., 10:30-11:30.

Professor Harry.

HISTORY

* Merrick Whitcomb, Ph. D., ... Professor of History.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
James Francis Dilworth, A. M., . Instructor in English History.
Philip W. MacDonald, A. M., ... Instructor in History.
Assistant: ————.

For Undergraduates

1. Middle Ages—Renaissance.—This course includes the main facts of European history from the fall of the Roman Empire to the beginning of the Lutheran Reformation. Lectures and recitations. M., W., F., 9:30-10:30. Mr. MacDonald.

3. The Revolution and Napoleon.—Beginning with the Bourbon period this course includes a study of the Ancien Régime and the French Revolution, and follows the fortunes of Napoleon to 1815. Lectures and recitations. M., W., F., 10:30-11:30.
Mr. MacDonald.

13. General Course in English History.—This course, while open to all students, is especially recommended for those who desire a general introductory course as preparatory to the study of both European and American history. The course traces the development of the English people from the earliest times to the present. The method is by lecture, text-book, and source-book. M., W., F., 1:00-2:00. Mr. Dilworth.

29. Ancient History to 476, A. D.—This course comprises a brief survey of the development of the principal Oriental nations; the political and the social life of the Greeks; the early political life and expansion of the Roman people, and their social and economic development under the Empire. T., Th., 8:30-9:30.
Mr. MacDonald.

15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. The work covers the period from the earliest discoveries to the present time and is based largely upon a text-book, supplemented by regular reports and lectures. Special quiz sections and conference groups at other hours, if necessary. M., W., F., 8:30-9:30. Associate Professor Cox.

For Undergraduates and Graduates

25. European History Since 1814.—An advanced course dealing with the problems of European history in the nineteenth cen-

* Absent on leave, 1913-14.

tury. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization T., Th., 10:30-11:30.

Open to Seniors; to Juniors by permission. Mr. MacDonald.

46. History of Germany.—Beginning with the early Germans this course will follow the history of the German peoples down to the present time. The relations of the Germans to the Roman Empire; conquests of Charles the Great; the Medieval Empire; the Reformation; rise of the Hohenzollern dynasty; period of Frederick the Great; Napoleon; Wars of Liberation; organization of the German Empire. T., Th., 10:30-11:30.

Omitted in 1913-14.

20. Spain and Spanish America.—A brief view of the development of the Spanish nation, tracing typical institutions that later affected the Spanish colonies; the discovery of America and the development of the Spanish colonial system; the struggle for Spanish American independence; the subsequent development of selected countries in Latin America, their relations with Europe and the United States; Pan-American movements of the present day. Lectures and special reports. Open to advanced students. M., W., 4:00-5:00. Associate Professor Cox.

21. American Constitutional History.—The course treats of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. M., W., F., 11:30-12:30.

Associate Professor Cox.

Open to those who have had Course 15 or an equivalent.

22. American Constitutional History (Continued).—A review of the leading governmental problems connected with the Civil War and Reconstruction Periods, and the subsequent industrial and territorial expansion of the United States. Lectures and special reports.

Omitted in 1913-14. Associate Professor Cox.

28. Problems of American Expansion.—A general view of the territorial development of North America with the United States as its chief factor. Emphasis will be given to filibustering operations in connection with Spanish-American relations. Lectures and special reports. Associate Professor Cox.

Omitted in 1913-14.

35. The Ohio Valley and the Old Northwest.—A survey of the discovery, exploration, and settlement of this locality and of its development to the Civil War. Lectures and special reports. Open to teachers and advanced students. This is suggested as a preparatory course for Course 39 and for those who teach local history in the grades. S., 9:30-10:30. Associate Professor Cox.

39. Seminary in American History.—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. S., 10:30-12:30.

Associate Professor Cox.

Open to properly qualified teachers.

40. English Constitutional History.—The course traces the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 11:30-12:30. Mr. Dilworth.

44. English History Since 1856.—This course deals with the political, economic, and religious history of England since the close of the Crimean War and with the present day problems. Students are requested to subscribe to *The London Times* (Weekly Edition). T., Th., 11:30-12:30. Mr. Dilworth.

Open to Seniors and Juniors.

Omitted in 1913-14.

Evening Courses

48. General Course in English History.—This course, while open to all students, is especially recommended for those who desire a general introductory course as preparatory to the study of both European and American history. The course traces the development of the English people from the earliest times to the present. The method is by lecture, text-book, and source-book. W., 7:30-9:30.

Omitted in 1913-14. Mr. Dilworth.

47. General Course in American History.—The work of this course covers the Colonial and Revolutionary Periods and is based largely upon a text-book, supplemented by regular reports and lectures. Th., 7:30-9:30. Associate Professor Cox.

Omitted in 1913-14.

49. General Course in American History (Continued).—The work of this course covers the period from 1789 to the present time, and is conducted in the same manner as Course 47. Th., 7:30-9:30. Associate Professor Cox.

55. English Constitutional History.—The course traces the development of the English constitution from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American History. W., 7:30-9:30. Mr. Dilworth.

LATIN

John Miller Burnam, Ph. D., ... Professor of Latin.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.

For Undergraduates

1. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Informal discussion of the life and thought of the times.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 10:30-11:30.
Professor Burnam and Assistant Professor Semple.

2. Cicero, Tacitus, Plautus, Horace.—Cicero's *Laelius,* Tacitus' *Agricola,* Plautus' *Menaechmi,* selections from Horace's Satires and Epistles.

Sec. I, T., Th., S., 9:30-10:30.
Sec. II, M., W., F., 9:30-10:30.
Assistant Professor Semple.

Course 2 is open to students who have completed Course 1.

6. Prose Composition.—One hour per week throughout the year. T., 10:30-11:30. Assistant Professor Semple.

Course 6 is required of all students who choose Latin as a major. It may be taken any year after the completion of Course I.

3. Plautus and Terence.—M., W., F., 11:30-12:30.
Assistant Professor Semple.

Course 3 is open to students who have passed in Courses 1 and 2.

4. Tacitus and Gaius.—Three hours, to be arranged.
Professor Burnam.

Course 4 is open to students who have passed in Courses 1 and 2.

5. Latin Literature.—A general survey of the life and letters of the Roman people from the earliest times until the later Empire. W., 2:00-3:00. Assistant Professor Semple.

Primarily for Graduates

Hours in all cases to be arranged

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a. Cicero. Three hours.
10b. Virgil. Omitted in 1913-14.
10c. Caesar. Omitted in 1913-14.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1913-14 (Course 10a) is Cicero. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

Evening Course

13. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Informal discussions of the spirit and life of the times. M., 7:30-9:30. Assistant Professor Semple.

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*MATHEMATICS

Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
Stephen Elmer Slocum, Ph. D., Professor of Applied Mathematics.
Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.
Louis Brand, A. M., . . . Assistant Professor of Mathematics.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Joseph Henry Kindle, A. M., . . . Instructor in Mathematics.
Edward Smith, M. S., ... Instructor in Mathematics.

For Undergraduates

1. Algebra—Trigonometry — Analytical Geometry.— Selected portions of Algebra and the elementary Theory of Equations. Wentworth, *College Algebra.*

Trigonometry: Crockett, *Trigonometry;* Rothrock, *Trigonometry.*

Analytical Geometry of Two Dimensions treated from the Cartesian standpoint. Nichols, *Analytic Geometry.*

Sec. I, M., T., W., Th., F., 8:30-9:30. Miss Lawler.
Sec. II, M., T., W., Th., F., 9:30-10:30. Assistant Professor Moore.
Sec. III, M., T., W., Th., F., 10:30-11:30. Miss Lawler.
Sec. IV, M., T., W., Th., F., 9:30-10:30. Miss Lawler.

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* See other courses in Mathematics and Applied Mathematics, College of Engineering.

5. Calculus, Differential and Integral.—Osborne, *Calculus.* M., T., Th., F., 10:30-11:30.

Sec. I, Professor Hancock.

For Undergraduates and Graduates

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*

Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*

Professor Hancock.

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 9:30-10:30.

Omitted in 1913-14. Professor Hancock.

6a. Advanced Analytical Geometry of Two Dimensions.—C. Smith, *Conic Sections.* Lectures. M., W., F., 10:30-11:30, *first semester.* Assistant Professor Moore.

Course 6a is open to graduate students and to those who have passed in Course 5.

Omitted in 1913-14.

7a. Analytical Geometry of Three Dimensions.—The plane, straight line and quadric surfaces; theory of surfaces and curves. C. Smith, *Solid Geometry.* Lectures and text. T., Th., S., 10:30-11:30, *first semester.* Professor Slocum.

Course 7 is open to graduate students and to those who have passed in Course 5.

Omitted in 1913-14.

Primarily for Graduates

34. Advanced Algebra.—Part II.—M., Th., 4:00-6:00.

Professor Hancock.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with applications to problems in heat, electricity, potential, elasticity, etc. *Second semester,* Th., 4:00-6:00; S., 9:30-10:30.

Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. *First semester,* M., 4:00-5:00; W., 4:00-6:00.

Professor Slocum.

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to number of hours elected. Hours by special arrangement. Professor Slocum.

29. Theory of Functions of a Real Variable. S., 9:30-11:30.

Assistant Professor Moore.

The following courses which are given from time to time are omitted in 1913-14:

16a. Theoretical Mechanics.

16b. The Mathematical Theory of Elasticity.

26. The History and Teaching of Mathematics.

30. Theory of Numbers, Part I.—Natural Numbers.

31. Theory of Numbers, Part II.—Algebraic Numbers.—Dedekind's Theory.

32. Theory of Numbers, Part III.—Kronecker's Theory.

24. Elliptic Functions, Part I.—Analysis.

25. Application of Elliptic Functions, Part II.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.

36. Vector Analysis.

28. Theory of Functions.—Lectures on the Theory of Functions of a Complex Variable.

33. Advanced Algebra.—Lectures.

18a. Theory of Minimal Surfaces.

Evening Courses

40. Algebra—Trigonometry.—Selected portions of algebra and the elementary Theory of Equations. Ashton and Marsh, *College Algebra.* Trigonometry: Rothrock, *Trigonometry.* F., 7:30-9:30.

Mr. Smith.

42. Analytical Geometry and Elementary Calculus. W., 7:30-9:30. Mr. Kindle.

PHILOSOPHY

Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Henry G. Hartmann, Ph. D., ... Instructor in Philosophy.

For Undergraduates

1a. Introduction to Philosophy.—An outline study of the field of philosophical discussion, with a definition of its chief problems and the method of investigating them. Open to students who have completed one year of university work. *First semester,* M., W., F., 9:30-10-30. Professor Tawney.

2b. Logic.—An introductory course in the theory of reasoning, including the essentials of formal logic and the principles of proof. Open to students who have completed at least one year of work in the University. *Second semester,* M., W., F., 9:30-10:30.
Professor Tawney.

For Undergraduates and Graduates

3a. History of Philosophy from the Italian Renaissance to the time of Kant, the opening of the nineteenth century. *First semester,* M., W., F., 8:30-9:30. Professor Tawney.
Omitted in 1913-14.

4b. History of Philosophy from Kant to the Present.—Courses 3a and 4b will alternate biennially with Courses 5a and 6b. *Second semester,* M., W., F., 8:30-9:30. Professor Tawney.
Omitted in 1913-14.

5a. History of Ancient Philosophy to the beginning of the Christian Era.—*First semester,* M., W., F., 8:30-9:30.
Dr. Hartmann.

6b. History of the Philosophy of the Middle Ages.—*Second semester,* M., W., F., 8:30-9:30. Dr. Hartmann.

7a. Ethics.—An introduction to the theory of morals. The course includes, beside the theory of morality, discussions of selected problems of present moral experience. Open to students who have completed two years of work in the University. *First semester.*
Sec. I, M., W., F., 9:30-10:30.
Sec. II, M., W., F., 10:30-11:30.
Sec. III, M., W., F., 1:00-2:00.
Professor Tawney and Dr. Hartmann.

18b. Ethical Interpretation.—A study of the life of practical activity from the ethical standpoint. The fundamental concepts of political philosophy, the relation of morality to legislation, the

morality of the economic order, and the problems of moral training, receive special attention. Course 7a is prerequisite.

Sec. I, M., W., F., 10:30-11:30.

Sec. II, M., W., F., 1:00-2:00. Professor Tawney.

9a. Social Psychology.—See Psychology 8a.

This course counts towards a major in either psychology or philosophy. Dr. Hartmann.

10b. Aesthetics.—A discussion of the facts and principles involved in the experience of the beautiful and in the creation and appreciation of the various art-products. The course is to be conducted by means of lectures, text-book, and assigned readings. *Second semester,* M., W., F., 11:30-12:30. Dr. Hartmann.

11a. Scientific Method.—A study of the general laws of research and systematic representation in the field of science. *First semester,* M., W., F., 11:30-12:30. Professor Tawney.

15b. Scientific Method.—A study of the methods of five groups of sciences, namely, the mathematics, biology, physics, psychology, and philosophy. *Second semester,* M., W., F., 11:30-12:30. Professor Tawney.

Primarily for Graduates

19. The Philosophy of Immanuel Kant with special reference to its historical development. T., 12:30-2:30. Dr. Hartmann.

21. The Philosophy of Religious Experience.—This course involves a survey of the history of religions, as well as the theory of the religious life and a study of some of the problems of religious education. Th., 12:45-2:45. Professor Tawney.

For Teachers

12. The History of Philosophy.—In the fall of 1913 this course will begin with the philosophy of Immanuel Kant, it being part of a cycle of courses dealing with the history of philosophy. One hour throughout the year. S., 9:30-10:30. Professor Tawney.

13. Educational Philosophy.—A study of the relations between certain typical philosophical methods and the theory and practice of education.

Omitted in 1913-14.

17. The Field of Logic.—An introduction to the science of logic with special reference to the methods of recitation.

Omitted in 1913-14.

It should be remembered that work in the Department of Philosophy is facilitated by courses in psychology, sociology, political science, general history, economics, the history of education, art, and other allied subjects dealing with human life and the products of civilization.

Evening Courses

22. Ethics.—An outline of the history of morality, the theory of the moral life, and a study of the moral problems of the political and economic organization of society. M., 7:30-9:30.

Professor Tawney.

23. Logic. Th., 4:45-6:45. Dr. Hartmann.

PHYSICAL EDUCATION

ALFRED BRODBECK, ... Director of Physical Education.
MARGUERITE GRAY, A. B., . . . Instructor in Physical Education.

Physical Training for Men.—All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: Three hours per week for all members of the Freshman class (lectures on hygiene, one hour, work in the gymnasium, two hours), and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A physical examination is required of each student of the two lower classes upon entrance and upon completion of the required work. Appointments for the examination must be made with the Physical Director at the beginning of the first semester.

Credit: One credit will be given for each semester's work.

Hours.—Phys. Ed. 1 (Freshmen). Gymnasium, T., Th., 10:30-11:30; M., W., 11:30-12:30; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 4:00-5:00; T., Th., 11:30-12:30. Boxing, wrestling, fencing (voluntary). Mr. Brodbeck.

Physical Training for Women.—The work is arranged with a view to obtaining the best hygienic, corrective and recreative results. A physical examination will be made at the beginning of the Freshman and at the end of the Sophomore year.

The course for Freshmen consists of three hours attendance per week throughout the year. Two hours each week are spent in exercising in the gymnasium; the other hour is devoted to lectures on hygiene. The lectures must be attended by every member of the Freshman class, irrespective of the fact that she may be excused from the gymnasium work.

The course for Sophomores consists of two hours of exercise in the gymnasium, prescribed for all members unless excused by the Director of Physical Education or on a physician's certificate.

Credit: One credit will be given for each semester's work.

Hours—Phys. Ed. 1 (Freshmen), M., W., 11:30-12:30; M., W., 2:00-3:00; T., Th., 10:30-11:30; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 11:30-12:30, 1:00-2:00.

Voluntary Class.—T., Th., 9:30-10:30. Miss Gray.

PHYSICS

Louis Trenchard More, Ph. D., ... Professor of Physics.
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.
Assistants: Mr. Evens, Mr. ———.

For Undergraduates

26a. General Physics.—Lectures and recitations on mechanics, sound, and heat, illustrated with lecture experiments. *First semester,* M., W., F., 11:30-12:30. Professor More and Assistant.

27b. General Physics.—Lectures and recitations on light, electricity and magnetism, illustrated with lecture experiments. *Second semester,* M., W., F., 11:30-12:30.
Professor More and Assistant.

N. B.—The above courses are designed for students in the College of Liberal Arts only; they may be elected in the Freshman year. They will present the fundamental laws and phenomena of physics, and will be non-mathematical in treatment. Taken with Courses 2a and 22b, Experimental Physics, they satisfy the science requirement.

28a. Advanced General Physics.—Lectures and recitations on Mechanics and Heat. *First semester.* Twice weekly.
Dr. Porter.

29b. Advanced General Physics.—Lectures and recitations on Light, Electricity, and Magnetism. *Second semester.* Twice weekly.
Dr. Gowdy.

Prerequisites for Courses 28 and 29 are Courses 26 and 27, and Mathematics 1.

2a. Experimental Physics.—Laboratory work arranged to accompany General Physics. *First semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., F., 1:00-4:00 (for Engineers only).
Sec. IV, W., 1:00-4:00.

22b. Experimental Physics.—Laboratory work arranged to accompany General Physics. *Second semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., W., F., 1:00-4:00 (for Engineers only).

4. Advanced Experimental Physics.—Experiments in photometry, spectrum analysis, calibration of weights and thermometers, etc., requiring exact measurement. Twice weekly. It may be elected either semester. Dr. Porter.

For Undergraduates and Graduates

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30. Professor More.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester,* T., Th., S., 11:30-12:30. Omitted in 1913-14. Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester,* T., Th., S., 11:30-12:30. Omitted in 1913-14. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit according to number of hours elected. Dr. Allen.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical proc-

esses; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Without credit. Mr. Evens.

17b. Electric Waves and Wireless Telegraphy.—A course of lectures on the radiation emitted by electric and magnetic oscillators, with applications to wireless telegraphy and the theory of light. *Second semester*, M., W., 4:00-5:00.

20b. Ionization and Radio-activity.—A course of lectures and experimental demonstrations on the discharge of electricity through gases and the properties of the radio-active substances. *Second semester*, twice weekly. Associate Professor Allen.

Omitted in 1913-14.

For Graduates Only

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1912-13 the lectures discuss the theory of heat and generalized coordinates; 1913-14, electricity and magnetism; 1914-15, light. Twice weekly. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Daily. Professor More and Associate Professor Allen.

For Teachers Only

11. Laboratory Methods for Teachers.—This course comprises a set of experiments designed especially for teachers. The exercises will include those which are usually given in schools, and also those of a more difficult nature which illustrate the theoretical principles. S., 8:30-11:30. Dr. Porter.

Evening Courses

30a. General Physics.—Lectures with demonstrations on mechanics, heat, and sound. *First semester*, M., 7:30-9:30. Associate Professor Allen.

30b. General Physics.—Lectures with demonstrations on light, electricity, and magnetism. *Second semester*, M., 7:30-9:30. Associate Professor Allen.

31a. Experimental Physics.—Laboratory work to accompany General Physics. *First semester*. Sec. V, W., 7:30-9:30. Dr. Porter.

31b. Experimental Physics—Laboratory work to accompany General Physics. *Second semester*. Sec. V, W., 7:30-9:30. Dr. Porter.

POLITICAL AND SOCIAL SCIENCE

SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.
——— ———, ... Assistant Professor of Political Science.
WILLIAM HAMMOND PARKER, Ph. D., Assistant Professor of Economics and Social Science.

POLITICAL SCIENCE

1. American Government.—The primary aim of this course is to prepare for the duties of citizenship and lay a foundation for the further study of political science. The nature and organization of our federal government will be studied the first semester, and state and local government will be studied the second semester. M., W., F., 10:30-11:30. ———.

Not open to Freshmen.

For Undergraduates and Graduates

2a. European Governments.—A study of the nature and organization of the principal governments of Europe. *First semester,* M., W., F., 11:30-12:30. ———.

Open to Juniors and Seniors and to those students taking Course 1.

2b. International Law.—A study of the principles, rules, and customs controlling the states of the civilized world in their relation to each other. *Second semester,* M., W., F., 11:30-12:30.

Not open to Freshmen. ———.

6a. American Legislatures and Legislative Methods.—A detailed study of the manner in which law-making bodies are organized and operated. Special attention will be given to the organization and operation of the Ohio General Assembly. Problems before the General Assembly will be considered and practice given in the drafting of bills and municipal ordinances. *First semester,* T., Th., 8:30-9:30. Professor Lowrie.

6b. Public Finance and Taxation.—An introductory course in the principles of taxation and the existing methods of levying and collecting taxes—federal, state, and local. Also a study of the budget systems of the countries of the world as well as of states and cities. *Second semester,* T., Th., 8:30-9:30. ———.

Open to Juniors and Seniors and to those students who have taken Economics 1.

11a. Municipal Government.—A comparative study of municipal organization and administration in the United States and in European countries. Special attention is given to social and economic problems connected with urban life. *First semester,* M., W., F., 8:30-9:30. Professor Lowrie.

Not open to Freshmen.

11b. Municipal Functions.—A study of the activities of the modern city. Special attention will be given the problems involved in the contemporary development of Cincinnati. This course will be given in co-operation with the Municipal Reference Department. *Second semester,* M., W., F., 8:30-9:30. Professor Lowrie.

3. History of Political Ideas.—A study of the development of political thought. The first part of the course is devoted to a series of lectures on Oriental, Greek, Roman, and medieval political ideas, students being assigned collateral reading in Aristotle, Plato, Polybius, St. Augustine, Thomas Aquinas, Dante, and others. The political philosophers of later date are studied principally from their writings, particular attention being given to Machiavelli, Bodin, Hobbes, Locke, Montesquieu, Rousseau, Burke, Bentham, Mill, Maine, and Seeley. The relationship between the systems of the various philosophers and the history of their times will receive special attention. W., 4:00-6:00. ————.

Evening Course

1. American Government (See above).—Sec. II. M., 7:30-9:30. ————.

SOCIAL SCIENCE

For Undergraduates

5. Elementary Sociology.—An introductory course designed to present a working theory of the nature of society, the prevailing types of social organizations, and the larger problems connected therewith. The nature of sociology, facts of social evolution, social control, social organization, social ideals, social pathology, methods of social investigation, and the history of sociology. T., Th., 9:30-10:30. Assistant Professor Parker.

For Undergraduates and Graduates

7. Modern Social Theories.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, Small, and others. Particular attention is given to the development of social theory and to the consequences of the theories of these writers in the field of practical social reform. M., W., 10:30-11:30. Assistant Professor Parker.

8. Readings in the Current Literature of Social Science.—This course is designed to familiarize the student with the subject matter of current literary contributions on this subject and to give them the viewpoint of the best contemporary writers on all subjects of general interest in this field of study. It will consist of abstracts.

digests, and reviews of the best of the available current writings and discussions of the same. W., 1:00-2:00.

Omitted in 1913-14. Assistant Professor Parker.

20. Criminals and Delinquents.—Problems of Crime. Criminal anthropology, physical and psychical. Criminal diagnostics, definition of crime, detection and identification of criminals, state control of criminals. Criminal therapeutics, penalties, punishment and reformation of criminals, jails, prisons, and reformatories. Criminal hygienics, police prevention of crime, presumptive criminals. Principles of scientific penology, lynch-law, and the trend of crime in modern times. T., Th., 10:30-11:30.

Assistant Professor Parker.

15. Modern Philanthropy.—A study of the problems of charity. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. As an integral part of this course there will be a series of lectures on the scope and method of the work of the Associated Charities, the Department of Charities and Corrections of the City of Cincinnati, the House of Refuge, the Juvenile Court, the Juvenile Protective Association, the National Child Labor Organization, and the Social Settlement. The lecturers on these subjects will be Mr. T. J. Edmonds, secretary of the Associated Charities; Rev. J. O. White, superintendent of Union Bethel; Dr. E. N. Clopper, superintendent of the House of Refuge; Miss Helen Trounstine, secretary of the Juvenile Protective Association; and Dr. Boris D. Bogen, superintendent of the Jewish Settlement. M., W., 9:30-10:30. Assistant Professor Parker.

21. Social Problems.—A study of current social problems and the influence of certain factors in social evolution. The function, origin, forms, development, and problems of the family. Problems of population, immigration, the negro, the city, poverty and pauperism, education, and social progress. T., Th., 11:30-12:30.

Assistant Professor Parker.

22. Seminary.—Opportunity is here given for the detailed study of special problems in social science. Hours to be arranged.

Assistant Professor Parker.

Evening Course

5. Elementary Sociology.—A fundamental course dealing with the origin, composition, evolution, and functions of society. Special attention will be given to the study of the existing social organization and certain of the larger problems connected therewith. This course is designed to be introductory to all advanced work in the field of Social Science. Th., 7:30-9:30.

Assistant Professor Parker.

PSYCHOLOGY

BURTIS BURR BREESE, PH. D., ... Professor of Psychology.
SCHACHNE ISAACS, A. M., ... Assistant in Psychology.

For Undergraduates

1a. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. *First semester.* M., W., F., 11:30-12:30. Professor Breese.

1b. A continuation of 1a.—Section 1. *Second semester.* M., W., F., 11:30-12:30. Professor Breese.

For Undergraduates and Graduates

2a. Experimental Psychology.—Laboratory course. *First semester,* M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—A continuation of 2a. *Second semester,* M., W., F., 2:00-4:30.
Professor Breese and Mr. Isaacs.

8a. Social Psychology.—The aim of this course is to exhibit the human mind in its development within a social environment; to show how, under the influence of the social environment, the native tendencies of the mind become gradually organized into systems of increasing complexity, and the ways in which they co-operate in shaping and sustaining such institutions as come to exist among men in civilized societies. Open to students who have had Introductory Psychology. *First semester,* M., W., F., 9:30-10:30.
Dr. Hartmann.

9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.
Professor Breese and Mr. Isaacs.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Th., 3:00-5:00.
Professor Breese.

6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Hours to be arranged.
Professor Breese.

For Teachers

5. Elements of Psychology.—A general account of the facts of mental life and their application to education. One credit per semester for A. B. S., 11:30-12:30. Professor Breese.

Evening Course

10. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. T., 7:30-9:30. Professor Breese.

ROMANCE LANGUAGES

PHILLIP OGDEN, PH. D., . . . Professor of Romance Languages.
RALPH EMERSON BASSETT, A. M., Assistant Professor of Romance Languages.
LEROY JAMES COOK, A. M., ... Instructor in French.

FRENCH

For Undergraduates

1. Elementary French.—Fraser and Squair, *French Grammar and Reader;* Dumas, *L'Evasion du Duc de Beaufort;* Malot, *Sans Famille;* Labiche, *La Grammaire;* Daudet, *Le Petit Chose.* Composition based on Fraser and Squair's *French Reader.*

Sec. I. M.. W.. F.. 11:30-12:30.
Sec. II, T., Th., S., 8:30-9:30. Mr. Cook.

2. Intermediate French.—*First semester,* Fraser and Squair's *French Grammar,* Part II; François, *French Prose Composition;* dictation and modern texts. *Second semester,* nineteenth century prose writers, etc. Dictation and composition.

Sec. I, T., Th., S., 9:30-10:30.
Sec. II, M., W., F., 9:30-10:30.
Mr. Cook, Assistant Professor Bassett.

Course 2 is open to students who have taken Course 1 or its equivalent.

11. French Literature in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Handbook: Lanson, *Histoire de la Littérature française.* M., W., F., 10:30-11:30.
Professor Ogden.

Course 11 is open to students who have passed in Course 2.

3. French Composition.—Review of the more difficult points in French Grammar and Syntax. Dictation. Reproduction of narrative and descriptive passages read by the instructor from French authors. Conversation. Original composition in French. T., Th., 11:30-12:30. Mr. Cook.

With the permission of the instructor.

Course 3 is open to students who have taken Course 2.

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Corneille, Racine, Molière. T., Th., 9:30-10:30. Professor Ogden.

Course 4 is open to students who have passed in Course 11.

5. French Drama in the Nineteenth Century. W., F., 1:00-2:00. Mr. Cook.

10. Old French Readings.—Constans, *Chrestomathie de l'Ancien Français*. Lectures on historical French grammar. T., 4:00-6:00. Professor Ogden.

Course 10 is open to students who have passed in Course 4 or its equivalent.

24. Special Studies in Modern French Literature.—Philosophic School; Parnassian School; Symbolists. T., 4:00-6:00. Assistant Professor Bassett.

Course 24 is open to students who have passed in Course 4 or Course 11.

26. French Schools of Poetry in the Nineteenth Century.—Lectures; outside reading; conversation in French. T., Th., 8:30-9:30. Professor Ogden.

For Teachers

30. Intermediate French.—Advanced grammar, composition, conversation. One credit per semester for A. B. S., 10:30-11:30. Mr. Cook.

24. Course 24, outlined above, is open to teachers, by permission, as well as to regular students.

Teachers who are pursuing graduate studies and are qualified to do advanced work in the Romance languages can elect courses from the above upon advice from the head of the department.

SPANISH

For Undergraduates

6. Elementary Spanish.—Pronunciation, grammar, composition, conversational drill. Text-books: Olmsted and Gordon, *Spanish Grammar;* Harrison, *Elementary Spanish Reader;* Padre Isla, *Gil Blas de Santillana;* Ramos Carrión, *Zaragüeta;* Valera, *Pepita Jiminez.* M., W., F., 10:30-11:30.

Assistant Professor Bassett.

9. Intermediate Spanish.—Representative texts since 1850. Becquer, *Leyendas;* Caballero, *La gaviota;* Pereda, *Pedro Sánchez;* Pérez Galdós, *Doña Perfecta;* Hartzenbusch, *La coja y el encogido.* M., W., F., 1:00-2:00. Assistant Professor Bassett.

18. Spanish Composition.—Systematic practice in speaking and writing. Review of syntax. Letter writing. Román y Salamero, *El castellano actual;* Harrison, *Spanish Correspondence;* Umphrey, *Spanish Composition.* T., Th., 1:00-2:00.

Assistant Professor Bassett.

For Undergraduates and Graduates

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Cervantes, *Don Quijote;* selected plays of Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. T., Th., 10:30-11:30.

Assistant Professor Bassett.

22. The Picaroon Novel.—*Lazarillo de Tormes;* Alemán, *Guzmán de Alfarache* (Part I); Cervantes, *Novelas ejemplares* (selections); Espinel, *Marcos de Obregon.* T., Th., 10:30-11:30.

Assistant Professor Bassett.

Course 22 alternates with Course 8.

Omitted in 1913-14.

Evening Courses

31. Elementary Spanish.—Pronunciation, grammar, oral practice, and introductory reading. F., 7:30-9:30.

Assistant Professor Bassett.

32. Advanced Spanish.—T., 7:30-9:30. Mr. ————.

ITALIAN

For Undergraduates

7. Elementary Italian.—Grandgent, *Italian Grammar;* De Amicis, *Cuore;* Serao, *All' Erta, Sentinella;* Testa, *L'oro e l'orpello;* Giacosa, *Come le foglie.* M., W., F., 11:30-12:30.

Assistant Professor Bassett.

For Undergraduates and Graduates

16. Italian Novel in the Nineteenth Century.—Manzoni, Fogazzaro, Serao, Verga, Capuana. M., 2:00-4:00.

Omitted in 1913-14. Professor Ogden.

17. Rapid Reading of Modern Italian: Fogazzaro, Carducci, Annunzio. M., 2:00-4:00. Professor Ogden.

SIX-YEAR COMBINED COLLEGIATE AND MEDICAL COURSE

(Leads to the degrees B. S., M. D.)
(Enforced after June 1, 1913)

The entrance requirements to this course will be those of the College of Liberal Arts of the University of Cincinnati. The first year of the course will consist of the following courses, which are described in this Announcement under the corresponding numbers. It should be noted that five hours of credit for a laboratory course includes three lecture hours and two laboratory periods of three hours each.

First Year

Chemistry—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. If a student enters with advanced credits in chemistry, he shall take physical chemistry.

Physics—*5 hours:* Lecture Courses 26 and 27; Laboratory Courses 2 and 22.

English—*3 hours:* Course 1.

German—*3 hours,* Course 1; or French—*3 hours,* Course 1.

Physical Education—*1 hour.*

The one-year college course in German is equivalent to two years in the High School, and in addition to this, as will be seen, there will be required, in the second year, a course in Scientific German, aimed to give the student a reading knowledge of German. Students who present on entrance an equivalent of German 1, and a reading knowledge of German, are required to take French 1 in their first year, and may substitute an elective for Scientific German in the second year; or those who present only the equivalent of German 1 will be obliged to take the Scientific German of the second year schedule in their first year. In this case French may be taken in the second year in place of German.

Second Year

Chemistry—*5 hours:* First semester, Courses 5 and 6 which have been formed by abbreviating and combining courses formerly described as 5, 6, and 7. Second semester, organic chemistry.

Biology—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. In addition to this, students are recommended to take a summer course in Biology at the Marine Biological Laboratory, Woods Hole, Mass.

(Will be enforced after June 1, 1913)

Scientific German—*3 hours* (see paragraph on French and German under "First Year").

Elective—*3 hours.*

The third, fourth, fifth, and sixth years of this combined course are the regular years of the Medical College.

*SEVEN-YEAR COMBINED COLLEGIATE AND MEDICAL COURSE

(Leads to the degrees A. B., M. D.)

The fact that a liberal education is necessary to the successful study and practice of medicine is being recognized more and more by leading authorities in the profession. To enable students, therefore, to obtain both the degrees of Bachelor of Arts and Doctor of Medicine in seven instead of eight years, a combined collegiate and medical course has been outlined by a joint committee of the two colleges of the University concerned.

Under this arrangement, a student on first being admitted to the College of Liberal Arts must obtain permission from the Dean of that college to elect the premedical course, which is as follows:

First Year	Hours per week I Sem.	II Sem.
Gen. Inorganic Chemistry (1, 3)	3	3
Gen. Inorganic Chemistry Lab. (2, 4)	2	2
Gen. Physics (26, 27)	3	3
Gen. Physics Lab. (2, 22)	2	2
English Composition (1)	3	3
** German or French	3	3
Elective	2	2
	18	18
Second Year		
Qualitative Analysis (Chem. 5)	3	..
Qualitative Analysis Lab. (Chem. 6)	2	..
Animal Biology and Gen. Zoology (1, 3)	3	3
Animal Biology and Gen. Zoology Lab. (2, 4)	2	2
** German or French	3	3
Elective	5	10
	18	18

* It is probable that the Seven-Year Combined Course will be discontinued after the academic year 1913-14.

** In case four units in this language are offered for admission to the University the requirements in it shall be regarded as fulfilled; in case two units in this language are offered the student is required to take an additional three-hour course in it during the first year. Hours vacated in this way shall be regarded as elective.

THIRD YEAR

Organic Chemistry (8)	3	..
Physiological Chemistry	..	3
Organic Chemistry Lab. (9)	2	..
Physiological Chemistry Lab.	..	2
Embryology (Biol. 19a)	2	..
Embryology Lab. (Biol. 20a)	2	..
Comparative Anatomy of Vertebrates (17)	..	2
Zoology and Comparative Anatomy Lab.	..	2
Psychology or Logic	3	3
Theory of Scientific Method (1, 8)	..	..
Elective	6	6
	18	18

FOURTH YEAR (First-year Medical)

Histology (Biol. 21)	2	2
Elective	4	..
Human Anatomy	Regular work at the Medical College.	
Physiology Lectures		
Physiology Lab.		

Elective in the University if desired.
Physical Chemistry, Adv. Organic Chemistry, Cytology (lab.), etc.

FIFTH, SIXTH, AND SEVENTH YEARS

See second, third, and fourth years of the regular Medical College Schedule.

Physical Education is required of all students in the first and second years.

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*DRAWING, MODELING, AND CARVING

By an arrangement with the Art Academy of Cincinnati (originally established as the McMicken School of Design in 1869, and a department of the University of Cincinnati from 1871 to 1884, when it was transferred to the Cincinnati Museum Association) students of the University may elect courses in Drawing, Modeling, and Carving at the Art Academy in 1913-14, and, upon presentation of the proper certificate from the Director of the School,

* For the teachers' training course in art, see announcement of the College for Teachers.

may receive credit in the Registrar's office for such courses as part of the total number of "credits" required for the degree of Bachelor of Arts. On the payment of a fee of twenty-five dollars at the office of the Art Academy, the student is admitted to the several day classes (drawing, modeling, carving, and design). For the night classes the fee is five dollars. In the Summer Term of ten weeks no instruction is given at night. The Winter Term extends from September 22, 1913, to May 29, 1914, the Summer Term from the middle of June to the end of August.

The following courses of instruction are offered:

1. Free-hand Drawing.—From objects and casts. Day classes, M., W., F., 8:45-12:45, or M., W., 1:30-4:30, and S., 8:45-12:45. Night classes, T., Th., F., 7:15-9:15.

Miss Young, Miss Miller, Miss Lord,
Miss Wilson, and Mr. Wiessler.

Color work in oils, water colors, or pastels is also taught in the day classes, but not at night.

2. Drawing and Painting from Life.—Figure or head. Day classes, M., T., W., Th., F., S., 8:45-12:45, and M., T., W., Th., F., 2:00-4:00. Night classes, M., T., W., Th., F., 7:15-9:15.

Mr. Duveneck, Mr. Meakin, and Mr. Wessel.

Artistic Anatomy is a part of this course. The night classes draw the head or figure from life.

3. Modeling.—From casts. Day classes, T., Th., S., 8:45-12:45. Night classes, M., W., 7:15-9:15. Mr. Barnhorn.

4. Modeling. Advanced Course.—From life. Day classes, M., T., W., Th., F., S., 8:45-12:45. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Barnhorn.

5. Wood Carving.—M., W., F., 12:30-4:30, and S., 8:45-12:45.
Mr. Fry.

6. Decorative Design.—The principles of design, preparation of decorative motives, and their application to metals, enamels, leather, porcelain, etc. T., W., Th., F., 1:30-4:30. Miss Riis.

From the courses above offered a student may elect not more than six hours in any one semester. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

COLLEGE FOR TEACHERS

The College for Teachers is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati.

COMMITTEE IN CHARGE

Charles William Dabney, Ph. D., LL. D., President of the University.
Arch I. Carson, M. D., Member of the Board of Directors of the University.
Randall Judson Condon, A. M., Superintendent of Cincinnati Schools.
Emil Pollak . . . . . Member of the Board of Education.

FACULTY AND INSTRUCTORS

Charles William Dabney, Ph. D., LL. D., President of the University.
Randall Judson Condon, A. M., Superintendent of Cincinnati Schools.
William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education, and Dean of the College for Teachers.
John William Hall, A. M., Professor of Elementary Education.
Henry Skinner West, Ph. D., Professor of Secondary Education.
Burtis Burr Breese, Ph. D., ... Professor of Psychology.
Nevin Melancthon Fenneman, Ph. D., Professor of Geology and Geography.
Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Harris Miller Benedict, A. M., ... Professor of Botany.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Cyrus De Witt Mead, A. M., Assistant Professor of Elementary Education.
J. Ernest Carman, B. S., M. Di., . Assistant Professor of Geology.
Abbie Louise Day, B. S., . . Instructor in Elementary Education.
Henry Gottlieb Hartmann, Ph. D., . . Instructor in Philosophy.
Vernon Lantis, A. M., ... Instructor in Botany.
Annette Braun, Ph. D., ... Instructor in Biology.
Schachne Isaacs, A. M., ... Assistant in Psychology.
Walter Bucher, Ph. D., . . Assistant in Geology and Geography.

OTHER OFFICERS OF INSTRUCTION

Courses in special subjects are given by the following persons connected with the Cincinnati public schools:

Walter H. Aiken . . . . . Music.
William H. Vogel . . . . . Art and Hand Work.

Carl Ziegler, M. D. . . . . Physical Training and Hygiene.
A. H. Steadman . . . . . Penmanship.
H. H. Fick . . . . . German.
Julia S. Bothwell . . . . . Kindergarten.
Mary Elizabeth Hyde . . . . . Art.
William P. Teal . . . . . Art.
Jeannette Swing . . . . . Art.

The technical instruction and training in kindergarten courses is given by the following persons on the teaching staff of the Cincinnati Kindergarten Training School:

Lillian H. Stone . . . . . Principal.
Grace Anna Fry . . . . . Supervisor.
Josephine Simrall . . . . . Instructor.
John Jerome Thompson . . . . . Art.
Mrs. W. E. Lewis . . . . . Physical Training.
Mary Culbertson . . . . . Physical Training.

At the Art Academy of Cincinnati:

Elizabeth Kellogg . . . . . History of Art.

GENERAL STATEMENT

The College for Teachers is the department of education of the University. It is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati. It is primarily a professional school for the training of teachers under University auspices, in close touch with a cosmopolitan public school system which serves as a working laboratory for teachers and students of education. Affiliated with the college are the Cincinnati Kindergarten Training School, the Art Academy of Cincinnati, and the Cincinnati Public Schools.

GENERAL REGULATIONS

The conditions governing admission, graduation, prerequisites, privileges, etc., vary with the different professional programs offered, and are best indicated in connection therewith, as follows:

PROGRAM I. For those fitting, primarily, for positions in elementary schools.

Admission.—This program is open to Seniors and graduates, and may be pursued during a single year.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts without being compelled to carry more than three hours work per semester in addition to the courses in education indicated below.

PREREQUISITE COURSES.—Before entering upon this program students must have had, as a part of their college courses, and as suitable prerequisites to the courses in education, the equivalent of the following:

Psychology, three hours per week for one year.
Ethics, three hours per week for one-half year.
Physiography, five hours per week for one year.
American history, three hours per week for one year.

Those who have had a year's study in American history in high school shall be exempt from the requirement in this subject.

COURSES REQUIRED.—

Education 1	6 credits.
Education 2	6 "
Laboratory work (30 hours practice teaching in connection with Education 2)	2 "
Education 4	2 "
Elected from the following	8 "
Education 14	4 credits.
Education 16	2 "
Education 20	2 "
Education 22	2 "
Total	24 credits.

GRADUATION AND PRIVILEGES.—Seniors who complete the above courses in education may count the same toward the A. B. degree in the McMicken College of Liberal Arts and receive a Teacher's Diploma from the College for Teachers. This diploma entitles the graduate to a place on the preferred list of those who are eligible to appointment in the Cincinnati schools without examination except in Theory and Practice of Teaching, after two months of successful practice teaching.

Graduate students, in addition to receiving a Teacher's Diploma, will be given opportunity to fulfill the required practice teaching in the public schools during this year of study, so that they may become eligible to appointment in the local schools at the end of the year. They will also be permitted, by doing satisfactory pieces of independent work in connection with the courses in Education 1 and Education 2, to count either or both of these courses toward the A. M. degree in the Graduate School. They will not, however, be permitted to register in other courses in the University without the approval of the Dean of the College for Teachers, and in no case will they be permitted to choose

work in any other department of the University in excess of three hours per semester.

All students pursuing this program have the further privilege of taking the brief courses in special subjects given by supervisors of the city schools on Saturday mornings (Education 32, 34, 36 and 38), in lieu of passing examinations in the teaching of these subjects.

PROGRAM II. For those fitting, primarily, for positions in secondary schools.

Admission.—This program is open only to graduates, with the approval of the Dean of the College for Teachers, the Dean of the Graduate School, and the head or heads of the University departments in which the student wishes to pursue advanced study; it may be taken in a single year. Students must give satisfactory evidence that they are well qualified, personally and otherwise, to undertake the work of this program and to become teachers in secondary schools. Such students must be willing to give the equivalent of two full high school sessions per week throughout the year (10 to 12 periods per week) as assistants in high school departments in which they are preparing to teach. Before registration a student must also be accepted by the principal of the high school and the head of the high school department in which apprenticeship is to be served; and in no case while pursuing this program will a student be permitted to choose more than the maximum of hours indicated below.

Prerequisite Courses.—Psychology and Ethics, as indicated in Program I.

Courses Required.—

Education 1, as indicated in Program I	6	credits.
Education 3	4	"
Practical Work (high school assisting)	2	"
Graduate work in not more than two subjects which the student is best qualified to teach	12	"
Total	24	credits.

Graduation and Privileges.—Completion of this program does not entail any privilege as to preference in appointment to positions as teachers in the local high schools, as is the case with the completion of Program I in relation to the local elementary schools. Nor, under the law of this state, can it exempt the graduate from an examination for a teacher's high school certificate, as Program

I exempts a candidate for a teacher's elementary certificate from examination, except in Theory and Practice of Teaching.

This program, however, with the provision which it makes for practical touch with high school work, will entitle graduates who complete it in a satisfactory manner to favorable consideration for positions in accredited schools of the University and in high schools generally, both public and private. It is for meeting the demands upon the University for teachers of this class that this program is primarily intended.

Preference in appointment to positions in the local high schools is given to college graduates who have had successful experience as regular teachers in elementary or secondary schools, who have achieved high rank as students in subjects which they wish to teach, who have made a professional study of the principles and problems of secondary education, and who obtain satisfactory marks in the high school examination conducted by the local Board of Examiners.

College graduates teaching in local elementary schools who aspire to appointment in the high schools of Cincinnati should pursue advanced courses in subjects which they wish to teach and take Education 3. Provision for doing this will be arranged at hours which do not conflict with class room duties.

PROGRAM III. For those fitting, primarily, for positions in kindergartens.

Admission.—This program is open to Seniors and graduates and may be pursued during a single year.

Seniors must have not less than ninety credits in the College of Liberal Arts, including all required courses in that college, and the prerequisite courses indicated below. Both Seniors and graduates may be permitted to carry Biology 36 or 37, but with this exception students shall give their time undividedly to this program.

Prerequisite Courses.—

Psychology, as in Program I.
Ethics, as in Program I.
Education 1.
Biology 36 and 37. Students who have elected Zoology in fulfillment of the science requirement in the College of Liberal Arts may omit Biology 36; those who have elected Botany may omit Biology 37.

Courses Required.—See list under Kindergarten Training, page 131.

Graduation and Privileges.—Graduates who have completed the above program in a satisfactory manner may count the same toward the degree of Bachelor of Arts in Education conferred by the College of Liberal Arts and the College for Teachers jointly, and receive diplomas from the Cincinnati Kindergarten Training School certifying that they are qualified to be directors in kindergartens. They will also be eligible to appointment in the local public kindergartens without examination except in the Theory and Practice of Kindergartening.

PROGRAM IV. For those fitting, primarily, for positions as teachers of German in elementary schools.

Admission.—This program is open to Seniors and graduates, and may be pursued during a single year.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts, toward which this program will count to the extent of eighteen credits.

Prerequisite Courses.—Before entering upon this program students must have had, as a part of their previous college courses, and as suitable prerequisites to courses in education, the equivalent of the following:

Psychology, as in Program I.

Ethics, as in Program I.

For those who have had no German in high school, the equivalent of German 1, 2, 3, 4, 21, 5 and 10 or 20.

For those who have had two years of German in high school, the equivalent of German 2, 3, 4, 21, 5 and 10 or 20.

For those who have had four years of German in high school, the equivalent of German 4, 21, 5 and 10 or 20.

In no case will students be permitted to enter upon this program without the ability to speak the German language readily and fluently.

Courses Required.—

Education 1	6 credits.
Education 2	6 "
Education 4	2 "
Education 30, with fifteen hours practice per semester	4 "
Total	18 credits.

Graduation and Privileges.—The same as in Program I, with the following modifications:

The restrictions as to the amount of other work to be carried by students does not apply to those pursuing this program. They shall, however, submit their cards to the Dean of the College for Teachers for his approval before registration. They should also arrange, if possible, to take the courses given on Saturday mornings by the Supervisors of Drawing and Music in lieu of examinations in these subjects.

PROGRAM V. For those fitting for positions as instructors in education, supervisors, critic teachers, or administrators in educational positions requiring experience and advanced study.

For meeting the needs of this class of students appropriate opportunity is given in advanced courses in education, including seminar work, and such courses may be counted toward fulfilling requirements for the higher degrees conferred by the Graduate School. For further information see statements in connection with the description of various courses.

PROGRAM VI. For those fitting for positions as teachers or supervisors of art.

See pages 133-135.

SPECIAL COURSES

Special Courses are offered to teachers in Cincinnati and vicinity, and are given on Saturdays and at hours during the week which do not conflict with the duties of the class-room. Credit is given on the books of the Registrar for satisfactory work done in these courses.

For other courses open to teachers, see the announcement of the various departments of the McMicken College of Liberal Arts under the head "For Teachers."

REQUIREMENTS OF THE CINCINNATI BOARD OF EDUCATION

For the benefit of students who wish to become teachers in the schools of Cincinnati a Circular of Information has been prepared showing the method of appointment, salaries, and character of the examination for teachers who are candidates for positions in the Cincinnati Public Schools. A copy of this circular may be had upon application to the Superintendent of Schools or the Dean of the College for Teachers.

APPOINTMENT COMMITTEE

The Appointment Committee offers its services, without charge, to students seeking appointment to educational positions for which they are properly qualified. The Dean of the College as Chairman is assisted by other members of the faculty who are familiar with the student's work, and students who are candidates for appointment and who desire to avail themselves of the services of this committee are invited to register at the office of the Dean, on blanks provided for this purpose.

COURSES OF INSTRUCTION

The following is the list of courses offered for the year 1913-14. Certain of these courses are required of candidates for the first or preferred list of persons eligible to appointment in the Cincinnati schools. Others are intended to meet the needs of advanced students of education, as well as of teachers of experience. Courses which are prerequisite to the pursuit of the various professional programs for teachers are also included in this announcement, but with this exception only those which are primarily professional in character will be found here. All courses given in the University, many of which are semi-professional in character, are open to properly qualified students in the College for Teachers. (See the announcement of the McMicken College of Liberal Arts.)

EDUCATION

Education 1. History and Principles of Education.—Lectures, required reading, and discussions. Beginning with primitive society, this course considers the various conceptions of education as they have arisen in the course of history. Special attention will be given to those conceptions which have been most instrumental in shaping current tendencies. Open to Seniors and graduates. When pursued by a graduate student this course may be counted for credit toward a graduate degree provided the student does a satisfactory piece of independent work and embodies the results of the same in an acceptable written thesis. A graduate student wishing to so count this course must declare his or her intention to this effect at the time of registration. This course is also a prerequisite for students pursuing Program III, and as such may be taken during the Junior year. (See page 121.) M., W., F., 10:30-11:30. Professor Burris.

Education 2. Theory and Practice of Teaching.—Lectures, discussions, practical work, and required readings. Development of the principles of method of the recitation and their application

in the proper conduct of class exercises in the several subjects of the elementary schools. Three hours of class work and fifteen hours of practice per semester. Hours for practice work must be arranged with the instructor before registration. Open to Seniors and graduates. Under the same conditions as those indicated under Course 1, when taken by a graduate student, this course may count toward a graduate degree to the extent of six credits. M., W., F., 9:30-10:30. Professor Hall.

Education 3. Principles and Problems of Secondary Education.—Lectures, required readings, student reports, class discussions. The development of American secondary education and the function of the secondary school. The enlarging program of studies, educational values in common secondary subjects, the theory of formal discipline, the construction of curricula, effective method for secondary instruction. The professional experience of those taking the course will be utilized to develop an introduction to the pedagogy of typical high school subjects. Open to graduates and teachers, including candidates for appointment to local secondary positions. Under certain conditions the course may count for a graduate degree to the extent of four credits. For this course as a part of a regular program, see Program II, p. 120. S., 9:30-11:30.

Professor West.

Education 4. School Economy.—Lectures, discussions, and required readings. This course will consider principles and practice of class-room management, including such problems as preventing the waste of time and energy, preserving hygienic conditions, discipline, grading, promotions, tests. Open to Seniors and graduates. This course may not be counted for the higher degrees. F., 11:30-12:30. Miss Day.

Education 6. General Method.—This course is similar to Education 2 and is intended especially for appointees to positions in the public schools of Cincinnati who have not had a course in this subject. S., 8:30-9:30. This course may count as graduate work under the same conditions as are indicated in connection with statement on Education 1. One section in this course will be given at 9:30 in case the number registered for it requires a division of the class.

Professor Hall, Assistant Professor Mead, and Miss Day.

Education 7. Seminar.—Investigations and reports on special problems, chiefly in educational administration. Primarily for graduates, but open also to teachers of experience. W., 4:00-6:00.

Professor Burris and Professor West.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Actual school-room

tests will be given to evaluate common methods and practice. Results will be tested in a statistical manner. Required readings, reports, and discussions on scientific contributions to education. Place of meeting to be arranged. For graduates of the College for Teachers and others properly qualified. Two hours, to be arranged.

Professor Hall and Assistant Professor Mead.

Education 13. History of Modern Education.—This course is arranged to meet the needs of students in the Cincinnati Kindergarten Training School and of those in the Course for Teachers of Art. *First semester,* M., W., F., 3:00-4:00.

Professor Burris.

Education 14. The Teaching of English.—Lectures, discussions, and required readings. This course will consider the selection and organization of the subject matter and method of treatment in the grades of the following subjects: reading, spelling, literature, composition, and grammar. Open to Seniors and graduates; it may be counted toward the A. B. degree. M., W., 8:30-9:30. Miss Day.

Education 16. The Teaching of History.—Lectures, discussions, readings, and reports. This course aims to cover the field of history as usually presented in elementary schools. Gathering material for lesson plans, its arrangement for presentation, the consideration of difficulties involved, and the method of overcoming the same will form the basis of the course. Open to Seniors and graduates; it may be counted toward the A. B. degree. F., 8:30-9:30. Assistant Professor Mead.

Education 20. The Teaching of Mathematics.—Lectures, discussions, and required reading. This course will aim to work up portions of material for presentation in the various grades according to the course of study, with devices and methods for their use. The principles underlying the above will be developed. Open to Seniors and graduates; it may be counted toward the A. B. degree. *Second semester,* M., W., 11:30-12:30.

Assistant Professor Mead.

Education 21. Seat Work and School Room Devices.—Seat work based upon and related to the actual class work of the grades. The use of illustrative materials, devices, and games, and the principles underlying the same. For teachers of the first four grades. S., 9:30-10:30. Miss Day.

Education 22. The Teaching of Geography.—Lectures, discussions, and required readings. This course will deal with the collection of suitable material for teaching geography in the grades and with the organization and method of presentation of this ma-

terial. Open to Seniors and graduates; it may be counted toward the A. B. degree. *First semester,* M., W., 11:30-12:30.

Assistant Professor Mead.

Education 28b. Primary Teaching.—This course is for the purpose of acquainting prospective directors of kindergartens with the subject matter and method of the work done in primary grades, with special attention to the first year. Open to Seniors in the Cincinnati Kindergarten Training School. *Second semester.* Hour to be arranged. Miss Day.

Education 30. The Teaching of German.—This course consists of instruction, observation and practice teaching, and is intended especially for the teachers of German in the elementary schools. For the conditions under which students may enter this course see Program IV, p. 122. Fifteen hours of practice per semester. M., 9:30-10:30. Supervisor Fick.

Education 32. The Teaching of Art and Hand Work.—The aim of this course is to familiarize those intending to teach in the public schools with the art and hand work pursued in the elementary grades at the present time, and to place before them the best methods for obtaining satisfactory results. This course will embrace work in paper and light cardboard, drawing and painting from plant life and animal life, landscape and still life; analysis of color and design; and picture study both from the art side and its use in connection with language work. This course prepares for the city examination in this subject. *First semester,* S., 8:30-11:30, for twelve weeks. Given at Hughes High School. Supervisor Vogel.

Education 34. The Teaching of Music.—The purpose of the course is to give those who contemplate teaching in the public schools, or are at present teaching, a systematic and comprehensive training in the matter and method of school music. The system followed will be that used in the Cincinnati schools. This course prepares for the city examination in this subject. *Second semester,* S., 8:30-9:30. Given at Hughes High School.

Supervisor Aiken.

Education 36. The Teaching of Physical Training and Hygiene.—This course is for those fitting for positions in elementary schools. It will not be considered sufficient preparation to qualify as a special teacher. The course will include theory and practice of physical exercise, gymnastic games for the school-room and play-ground, school sanitation, and methods of teaching physiology and hygiene in the grades. *Second semester,* S., 10:30-11:30. Given at Hughes High School. Supervisor Ziegler.

Education 38. The Teaching of Penmanship.—This course will present the principles underlying the system of penmanship taught in the Cincinnati public schools, and will show the best methods of teaching it, accompanied by drills for the purpose of securing technique. The course prepares for the city examination in this subject. Given at Hughes High School. *Second semester,* S., 9:30-10:30. Supervisor Steadman.

BIOLOGY

For a complete list of all the courses offered by the Department of Biology, see the announcement of the McMicken College of Liberal Arts.

38. Insect Life.—A course for beginners. Life histories of insects of importance and their relationships to man. Field trips and lectures. Two credits per semester. S., 8:30-12:30.

Dr. Braun.

GEOLOGY AND GEOGRAPHY

For a complete list of all the courses offered by the Department of Geology, see the announcement of the McMicken College of Liberal Arts.

1. An introductory study of minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean, followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, T., Th., 2:00-4:30; M., W., 2:00-4:30; T., Th., 9:30-12:00; and T., Th., 1:00-3:30. Professor Fenneman and Dr. Bucher.

This course is a prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 118. It must be taken not later than the Junior year by those students who expect to enter upon this program during the Senior year. It may be taken as late as the Senior year by those students who wish to prepare for teaching in elementary schools after graduation from the College of Liberal Arts.

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology. Lecture, S., 8:30-10:30; field or laboratory, 10:30-12:50. Professor Fenneman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure. Lecture, S., 8:30-10:30; field or laboratory, 10:30-12:50.

Assistant Professor Carman.

16. Advanced Physiography of the United States.—Course 1 or 14 and Course 9 are prerequisite. Lecture, M., 4:00-6:00; W., 4:00-5:00. Professor Fenneman.

HISTORY

The following course in history is prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 118 for all students who have not had a year's course in American history in high school. Those students who wish to complete this program during the Senior year should take this course in history not later than the Junior year. If the student wishes to defer preparation for teaching in the elementary schools till after receiving the A. B. degree, this course may be taken as late as the Senior year.

For a complete list of all the courses offered in the Department of History, see the announcement of the McMicken College of Liberal Arts.

History 15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. The work covers the period from the earliest discoveries to the present time, and is based largely upon a text-book, supplemented by regular reports and occasional lectures. Special quiz sections and conference groups at other hours if necessary. M., W., F., 8:30-9:30.

Associate Professor Cox.

History 35. The Ohio Valley and the Old Northwest.—A survey of the discovery, exploration, and settlement of this locality, and of its development to the Civil War. Lectures and special reports. Open to teachers and advanced students. The course is suggested as preparatory to History 39 and for those who teach local history in the elementary schools. S., 9:30-10:30.

Associate Professor Cox.

PHILOSOPHY

For a complete list of all the courses offered by the Department of Philosophy, see announcement of the McMicken College of Liberal Arts.

7a. Ethics.—An introduction to the theory of morals. The course includes, beside the theory of morality, discussion of selected problems of present moral experience. Open to students who have completed two years of work in the University. *First semester,* M., W., F., in four sections, 9:30, 10:30 (two sections), and 1:00.

Professor Tawney and Dr. Hartmann.

This course is prerequisite to entrance upon professional programs, I, II, III, and IV, outlined on pp. 118-123. It should be taken in the Junior year by those who pursue a professional program during the Senior year. It may be taken in the Senior year by those who expect to pursue a professional program after graduation from the College of Liberal Arts.

12. The History of Philosophy.—In the fall of 1913 this course will begin with the philosophy of Immanuel Kant, it being part of a cycle of courses dealing with the history of philosophy. One hour throughout the year. S., 9:30-10:30. Professor Tawney.

PSYCHOLOGY

For a complete list of all courses offered by the Department of Psychology, see the announcement of the McMicken College of Liberal Arts.

Psychology 1a. Introductory Psychology.—An analytical study of mental phenomena, with special reference to accurate observation and description. A general account of the subject matter of psychology. *First semester,* M., W., F., 11:30-12:30.
Professor Breese.

Psychology 1b. Section II. Educational Psychology.—The application of the principles of psychology to education. *Second semester,* M., W., F., 2:00-3:00. Professor Breese.

Courses 1a and 1b are prerequisite to entrance upon the study of education, as indicated in professional programs for teachers outlined on pp. 118-123. Those who wish to pursue one of these programs should take these courses in psychology not later than the Junior year. Those who wish to qualify for a teacher's diploma after graduation from the College of Liberal Arts may take these prerequisite courses in psychology during the Senior year.

Psychology 6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Hours to be arranged. Professor Breese.

Psychology 5. Elements of Psychology.—A general account of the facts of mental life and their application to education. S., 11:30-12:30. Professor Breese.

For Teachers

Psychology 7b. Elements of Psychology.—Open to students of the Cincinnati Kindergarten Training School and to those in the Course for Teachers of Art. *Second semester,* M., W., F., 3:00-4:00. Professor Breese.

Psychology 9. Mental and Physical Tests.—Laboratory methods. Three credits per semester. Hours to be arranged.
Professor Breese and Mr. Isaacs.

KINDERGARTEN TRAINING

The following courses in Kindergarten Training, not given at the University, may be taken at the Cincinnati Kindergarten Training School. The school is located at No. 6 Linton street, Vernonville. Registration day, Thursday, September 18, 1913. Work begins on Friday, September 19.

For conditions governing college students who are fitting primarily for positions in kindergartens, see Program III, page 121.

The Cincinnati Kindergarten Training School issues a special announcement giving full information, a copy of which may be had upon application to the Registrar at the above address.

COURSES

Kgtn. 1. Gifts.—This course has for its aim a thorough knowledge of the kindergarten material, a comparative study of typical and original plays or lessons with the gifts, and a study of Froebel's underlying principles. Juniors. *First semester,* M., 9:30-11:30. *Second semester,* two hours, to be arranged. Three credits. Miss Stone.

Kgtn. 2. Handwork.—This course includes both the old and new occupations with practice in each. Also the preparation of simple courses adapted for use in the kindergarten. *First semester,* T., 9:00-11:00. *Second semester,* Th., 2:30-4:30. Four credits.
Miss Stone and Special Teachers.

Kgtn. 3. Rhythms, Songs, and Games.—Juniors and Seniors. T., 3:30-4:30, throughout the year. Three credits. Miss Fry.

Each of these courses includes theory and practice, and is intended to develop resourcefulness and originality in the student, as well as to give technical mastery of kindergarten instrumentalities.

Kgtn. 4. Theory.—This course includes an introductory study of Froebel's Mother Play as the basis for story, song, and game in kindergarten teaching. Also the study of Froebel's writings, for the purpose of discovering the educational laws which form the foundation for child development and personal culture. *First semester,* M., Th., 8:30-9:30. *Second semester,* W., 2:00-3:00. Six credits. Miss Stone, Miss Fry.

Kgtn. 5. Stories.—This course includes lectures, discussions, and reference work concerning the literature of childhood, together with regular practice in the telling of stories. Juniors and Seniors. Th., 1:00-2:00; F., 2:00-3:00. One credit.

Miss Simrall.

Kgtn. 6. Program Construction.—A critical résumé of every division of kindergarten work and the educational principles involved. The careful planning of programs for definite periods of time and for meeting different conditions. Seniors, *First semester,* T., 1:50-3:30. *Second semester,* W., 1:30-3:30. Four credits.

Miss Bothwell.

Kgtn. 7. Observation.—Carefully supervised observation of the entire morning's work in kindergarten, followed by a discussion of the various activities and the educational principles involved. Juniors. *First semester,* hours to be arranged. Two credits. Miss Stone, Miss Fry.

Kgtn. 8. Practice Teaching.—A minimum of one-half year (days to conform to the public school calendar) in private, mission, or public school kindergartens, under at least two directors. Opportunity for increasing responsibility under careful supervision. Additional practice may be required to demonstrate the student's ability to satisfactorily conduct every phase of kindergarten work. Juniors and Seniors. Ten credits.

Miss Stone, Miss Fry.

Kgtn. 9. Organization of Mothers' Meetings.—A series of lectures covering the essentials of parliamentary law and the general purpose and subject matter of mothers' meetings. Short talks suitable for different occasions are prepared and given by the students. Seniors. *Second semester.* Two hours, to be arranged. Two credits. Miss Laws and Miss Stone.

Kgtn. 10. Art.—Rapid sketching on blackboard; brush work in ink and water color; decorative design. Art in kindergarten—decoration, pictures, and children's work. Th., 9:30-11:30. One credit. Mr. John J. Thompson.

Kgtn. 11. Music.—Study and criticism of kindergarten music, the child's voice, rhythm, and development of ear and tone. Attention to instrumental music with each student. Juniors and Seniors. *Second semester,* T., 1:30-2:30. One credit.

Supervisor Aiken.

Kgtn. 12. Hygiene and Physical Training.—This course includes lectures by specialists in each of these lines as well as class work in Physical Training. Its aim is to afford knowledge of sanitation,

food, dress, exercise, rest, children's diseases, and emergencies. To give ease and grace of movement, a wise conservation and use of energy, and to correlate with games played in the kindergarten such movements as are essential to the child's general development. Juniors and Seniors. Voice Training and Physical Training, Th., 2:00-3:00. One credit each year.

Kgtn. 13. Directors' Conference.—Lectures, discussions, suggestions in program work.

Occasional talks by prominent kindergartners and specialists in education from other cities. M., 2:00-4:00, throughout the year.

Miss Bothwell.

COURSES FOR TEACHERS OF ART

The purpose of this course is to prepare students for positions as teachers of art or supervisors of art instruction in public or private schools.

Admission presupposes (a) the satisfactory completion of an approved curriculum in a secondary school, and (b) an amount of work in art of approved quality equivalent to that represented by two years of study in the Art Academy of Cincinnati. It is understood, however, that all students are admitted upon a month's probation during which they must give satisfactory evidence of a high degree of capability in art and show that they are otherwise qualified to pursue the course.

The course is two years in length, during which the student's time is divided about equally between the professional program of the College for Teachers and studies in art at the Art Academy of Cincinnati. The satisfactory completion of the course leads to graduation and a diploma certifying that the holder is qualified to teach art or supervise art instruction in public or private elementary, secondary, and normal schools.

To students seeking a teacher's training course in art, Cincinnati offers exceptional opportunities. The Art Academy is a thoroughly equipped school for the training of artists. Adjacent to it is the Cincinnati Museum, containing large collections of paintings and sculpture, as well as of the applied arts. Each month, also, special exhibits of contemporary interest are arranged. The reference library of the Museum, relating especially to art, the Public Library, and the University Library are also available. In the University various lectures are open to students. For studies in natural history students have access to the Museum of the Society of Natural History, and the Cincinnati Zoological Gar-

den. Among the local art industries the Rookwood Pottery is of especial interest.

The work of observation and practice teaching is done in the regular public elementary and high schools of Cincinnati. This phase of the course, therefore, is conducted under the ideal conditions necessary to give the student a truly professional preparation. In connection with this practice are wrought out lesson-plans and outlines of work for the various grades of the elementary and high schools, in harmony with the requirements of a well graded course of study based upon modern educational principles. In this way the ability of students to organize a progressive course in art instruction is thoroughly tested.

For fees in the course for teachers of art see p. 26.

COURSES

The following courses of instruction, when not otherwise specified, are given at Hughes High School.

First year students will take Courses 2, 3, 4, and 5 or 9. They will spend the forenoon of each week-day, excepting Saturday, in work at the Art Academy. They will also take Education 13, the first semester, and Psychology 7b, the second semester, at the University. (See pp. 126, 130.)

Second year students will take Courses 1, 6, 7, 8, and 5 or 9. On forenoons and afternoons, when not occupied with these courses they will continue work at the Art Academy. At the University they will take Education 6. (See p. 125.)

Art 1. Theory and Practice of Teaching Art.—Principles upon which art teaching is based. The function of art in general education. Consideration of courses of study. Making of lesson plans and outlines of work for elementary and secondary schools. Principles of criticism. Discussion of methods and devices. F., 1:00-3:00. Miss Hyde.

Art 2. Water Colors and Crayons.—Landscape, nature products, pose and still life. Practice in arrangement of still life studies for the sake of good composition and harmony of color. Tu., 1:00-4:00. Mr. Teal.

Art 3. Art Design and Applications.—Study of the principles of balance, rhythm and harmony, in line, dark and light, and color. Fitness of design in form, tone and color, in relation to various applications. Design applied to embroidery, stenciling, weaving, basketry, metal and leather work. W., 1:00-3:00. Miss Hyde.

Art 4. Art Construction and Clay Work.—Paper and cardboard construction. Weaving, stenciling, book binding, block print-

ing, metal and leather work, basketry, pottery, and knife work. Th., 1:00-3:00. Miss Hyde.

Art 5. Pictorial Composition.—Critical study of landscape composition in black and white, in tones of middle gray, and in color. Figure compositions in color. Illustrated talks on the old masters and comparisons of their work with modern art. Instruction in blackboard illustration suited to the needs of teachers of regular subjects in elementary and secondary schools. Given in alternate years. M., 1:30-4:00. Mr. Teal.

Art 6. Design and Classic Ornament.—An advanced study of questions taken up in Art 3. Study of historic ornament. Adaptation of nature forms in design. Influence of materials on design. Theory of color. Designing of interiors with the study of original color schemes. W., 1:30-4:00. Mr. Teal.

Art 7. Observation and Practice Teaching.—Two half-days per week in the public elementary and secondary schools under critical supervision. Webster Public School on Th., 8:30-12:00, Miss Swing, critic. Hughes High School, Tuesday forenoon, Miss Hyde, critic.

Art 8. History of Art.—A study and amplification of Reinach's Apollo with the aid of photographs and plates in the Cincinnati Art Museum Library. Students required to make notes, outlines, and chronological tables. Instruction and practice as guides of visitors to the Art Museum. At the Art Museum. Tu., 2:00-4:00. Miss Kellogg.

Art 9. Mechanical Drawing.—Use and care of materials and instruments. Simple geometric problems. Lettering. Scale drawing. Isometric and orthographic projections. Intersections. Machine drawings. House plans and elevations. Tracing and blue printing. Given in alternate years in place of Art 5. M., 1:30-4:00. Supervisor Vogel.

SCHEDULE OF LECTURES, FIRST SEMESTER, 1913-14

*** Courses which are starred are open to Freshmen**

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATUR
8.30 A. M.	*Biol. 5a Biol. 21 *Chem. 1a Chem. 5a Educ. 14 Eng. 6 *Geol. 1 *Hist. 15 *Math. 1-Sec. i Phil. 5a Pol. Sc. 11a	Chem. 10a *Eng. 1-Sec. ii Eng. 2a Eng. 7a French 26 *French 1-Sec. ii Geol. 9 *Ger. 1-Sec. i *Hist. 29 *Lat. 1-Sec. i *Math. 1-Sec. i *Phys. 2a-Sec. i Pol. Sc. 6a	*Biol. 5a Biol. 21 *Chem. 1a Chem. 5a Chem. 29a Educ. 14 Eng. 6 *Geol. 1 *Hist. 15 *Math. 1-Sec. i Phil. 5a Pol. Sc. 11a	Chem. 10a *Eng. 1-Sec. ii Eng. 2a Eng. 7a *French 1-Sec. ii French 26 Geol. 9 *Ger. 1-Sec. i *Hist. 29 *Lat. 1-Sec. i *Math. 1-Sec. i *Phys. 2a-Sec. i Pol. Sc. 6a	*Biol. 5a *Chem. 1a Chem. 5a Educ. 16 Eng. 6 *Geol. 1 *Hist. 15 *Math. 1-Sec. i Phil. 5a Pol. Sc. 11a	*Eng. 1-Se Eng. 7a *French 1- Geol. 14 Geol. 9 *Ger. 1-Se *Lat. 1-Sec Phys. 11
9.30 A. M.	*Biol. 1a Biol. 21 Chem. 16a Educ. 2 *Eng. 1-Sec.i Eng. 5 Eng. 15 *French 2-Sec. ii *Ger. 2-Sec. i *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Greek 9 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. ii *Math. 1 Sec. iv Math. 8a Phil. 1a Phil. 7a-Sec. i Psy. 8a *Soc. Sc. 15	*Biol. 2a-Sec. iii Biol. 35 Econ. 11 *Eng. 3 Eng. 21 *French 2-Sec. i French 4 *Geol. 1-Sec. ii *Ger. 21 Ital. 15 Lat. 2-Sec. i *Math. 1-Sec. ii *Math. 1-Sec. iv Phys. Ed. (Vol.) *Phys. 2a-Sec. i *Soc. Sc. 5	*Biol. 1a Biol. 21 Chem. 16a Econ. 12a Educ. 2 *Eng. 1-Sec. i Eng. 5 Eng. 15 *French 2-Sec. ii *Ger. 2-Sec. i *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Greek 9 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. ii *Math. 1-Sec. iv Math. 8a Phil. 1a Phil. 7a-Sec. i Psy. 8a *Soc. Sc. 15	*Biol. 2a-Sec. iii Biol. 35 Econ. 11 *Eng. 3 Eng. 21 *French 2-Sec. i French 4 *Geol. 1-Sec. ii *Ger. 21 Ital. 15 Lat. 2-Sec. i *Math. 1-Sec. ii Math. 1-Sec. iv Phys. Ed. (Vol.) *Phys. 2a-Sec. i *Soc. Sc. 5	*Biol. 1a Chem. 16a Econ. 12a Educ. 2 *Eng. 1-Sec. i Eng. 5 Eng. 15 *French 2-Sec. ii *Ger. 2-Sec. i *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Greek 9 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. ii *Math. 1-Sec. iv Math. 8a Phil. 1a Phil. 7a-Sec. i Psy. 8a	Eng. 29 *French 2- Geol. 14 Geol. 9 Ger. 10 Hist. 35 Lat. 2-Sec Math. 29 Phil. 12 Phys. 11
10.30 A. M.	Biol. 21 Educ. 1 *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 French 11 *Ger. 2-Sec. ii *Ger. 4-Sec. i *Greek 2 Greek 3 Greek 18 *Hist. 3 *Lat. 1-Sec. ii *Math. 1-Sec. iii Math. 5-Sec. i Phil. 7a-Sec. ii Pol. Sc. 1 Soc. Sc. 7 *Span. 6	*Biol. 2a-Sec. iii Biol. 35 *Eng. 25-Sec. i *Geol. 1-Sec. ii *Ger. 3 Greek 12 Greek 13 Hist. 25 Lat. 6 *Math. 1-Sec. iii Math. 5-Sec. i *Phys. Ed. 1-Sec. i (Men) *Phys. Ed. 1-Sec. iii (Women) *Phys. 2a-Sec. i Soc. Sc. 20 Span. 8	Biol. 21 Educ. 1 *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 French 11 *Ger. 2-Sec. ii *Ger. 4-Sec. i Greek 3 Greek 18 *Hist. 3 *Lat. 1-Sec. ii *Math. 1-Sec. iii Phil. 7a-Sec. ii Pol. Sc. 1 Soc. Sc. 7 *Span. 6	*Biol. 2a-Sec. iii Biol. 35 *Eng. 25-Sec i *Geol. 1-Sec. ii *Ger. 3 Greek 12 Greek 8 Hist. 25 *Math. 1-Sec. iii Math. 5-Sec. i *Phys. Ed. 1-Sec i (Men) *Phys. Ed. 1-Sec. iii (Women) *Phys. 2a-Sec. i Soc. Sc. 20 Span. 8	Educ. i *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 French 11 *Ger. 2-Sec. ii *Ger. 4-Sec. i Greek 3 Greek 18 *Hist. 3 *Lat. 1-Sec. ii *Math. 1-Sec. iii Math. 5-Sec. i Phil. 7a-Sec. ii Pol. Sc. 1 *Span. 6	Eng. 29 French 30 Geol. 14 (Geol. 9 (I Ger. 10 Greek 19 Hist. 39 Math. 29 Phys. 11
11.30 A. M.	Chem. 8a *Econ. 1-Sec. i (Men) Educ. 22 Eng. 10 *French 1-Sec. i *Ger. 1-Sec. ii *Ger. 2-Sec. iii *Greek 15 Hist. 21 *Ital. 7 Lat. 3 Phil. 11a *Phys. Ed. 1-Sec. ii (Men) *Phys. Ed. 1-Sec. i (Women) *Phys. 26a Pol. Sc. 2a Psy. 1a	*Biol. 2a-Sec. iii Biol. 35 Chem. 12a *Econ. 2 *Eng. 25-Sec. ii Eng. 12 French 3-Sec. i *Geol. 1-Sec. ii (12.00) *Ger. 20 *Greek 17 Hist. 40 Phys. Ed. 2-Sec. ii (Men) Phys. Ed. 2-Sec. i (Women) Phys. 3a Soc. Sc. 21	Chem. 8a *Econ. 1 Educ. 22 Eng. 10 *French 1-Sec. i *Ger. 1-Sec. ii *Ger. 2-Sec. iii *Greek 15 Hist. 21 *Ital. 7 Lat. 3 Phil. 11a *Phys. Ed. 1-Sec. ii (Men) *Phys. Ed. 1-Sec. i (Women) *Phys. 26a Pol. Sc. 2a Psy. 1a	*Biol. 2a-Sec. iii Biol. 35 Chem. 12a *Econ 2 *Eng. 25-Sec. ii Eng. 12 French 3-Sec. i *Geol. 1-Sec. ii (12.00) *Ger. 20 *Greek 17 Hist. 40 Phys. Ed. 2-Sec. ii (Men) Phys. Ed. 2-Sec i (Women) Phys. 3a Soc. Sc. 21	Chem. 8a *Econ. 1-Sec. ii (Women) Educ. 4 Eng. 10 *French 1-Sec. i *Ger. 1-Sec. ii *Ger. 2-Sec. iii *Greek 15 Hist. 21 *Ital. 7 Lat. 3 Phil. 11a *Phys. 26a Pol. Sc. 2a Psy. 1a	Chem. 12a Geol. 14 (Geol. 9 (I *Greek 17 Hist. 39 Phys. 3a Psy. 5

SCHEDULE OF LECTURES, FIRST SEMESTER, 1913-14 — Continued

Courses which are starred are open to Freshmen

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a *Chem. 2a-Sec. ii Chem. 9a *Eng. 1-Sec. v *Eng. 1-Sec. vi Eng. 26a *Ger. 1-Sec. iii *Hist. 13 Phil. 7a-Sec. iii Span. 9	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 19a *Chem. 2a-Sec. i Chem. 6 Chem. 17 Eng. 13 Eng. 18 *Geol. 1-Sec. iv Phil. 19 (12.30) Phys. Ed. 2-Sec. ii (Women) Phys. 2a-Sec. ii Span. 18	*Biol. 2a-Sec. i Biol. 19a *Biol. 6a-Sec. i Biol. 10a *Chem. 2a-Sec. ii Chem. 9a *Eng. 1-Sec. v *Eng. 1-Sec. vi Eng. 26a French 5 *Ger. 1-Sec. iii *Hist. 13 Phil. 7a-Sec. iii *Phys. 2a-Sec. iv Span. 9	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii *Chem. 2a-Sec. i Chem. 6 Chem. 17 Chem. 13a Eng. 18 *Geol. 1-Sec. iv Phil. 21 (12.45) Phys. Ed. 2 Sec. ii (Women) Phys. 2a-Sec. ii Span. 18	Chem. 17 Chem. 29a Chem. 13a *Eng. 1-Sec. v *Eng. 1-Sec. vi Eng. 26a French 5 *Ger. 1-Sec. iii *Hist. 13 Phil. 7a-Sec. iii Span. 9	
*Biol. 2a-Sec. i Biol. 9 *Biol. 6a-Sec. i Biol. 10a *Chem. 2a-Sec. ii Chem. 9a *Geol. 1-Sec. i Geol. 9 (Lab.) Ital. 17 *Phys. Ed. 1-Sec. ii (Women) Psy. 2a	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 20a *Chem. 2a-Sec. i Chem. 6 Chem. 17 Eng. 13 Eng. 22 *Geol. 1-Sec. iii *Geol. 1-Sec. iv Hist. 21 Lat. 5 Phil. 19 (2.30) Phys. 2a-Sec. ii	Ast. 2a *Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 20a Biol. 10a *Chem. 2a-Sec. ii Chem. 9a *Geol. 1-Sec. i Lat. 5 *Phys. Ed. 1-Sec. ii (Women) *Phys. 2a-Sec. iv Psy. 2a	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii *Chem. 2a-Sec. i Chem. 6 Chem. 17 Chem. 13a Eng. 22 *Geol. 1-Sec. iii *Geol. 1-Sec. iv Phil. 21 (2.45) *Phys. 2a-Sec. ii	Chem. 17 Chem. 29a Chem. 13a *Phys. Ed. 1 Lec. (Men) *Phys. Ed. 1 Lec. (Women) Psy. 2a	
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HOURS TO BE ARRANGED

Astron. 4a Bib. Lit. 8a Biol. 15 Biol. 23 Biol. 30 Biol. 31	Chem. 11a Chem. 20 Chem. 21 Chem. 30 Chem. 41a	Geol. 2 Geol. 7 Geol. 8 Geol. 12 Geol. 13 Greek 4 Greek 16	Lat. 4 Lat. 9 Lat. 10 Lat. 12 Math. 40	Phys. 28a Phys. 4 Phys. 7 Phys. 8 Phys. 9 Psy. 3 Psy. 6a Psy. 9 Soc. Sc. 22	

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UNIVERSITY OF CINCINNATI RECORD

SERIES I, VOL. X APRIL, 1914 No. 2, PART 4

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1914-1915

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

ENTERED AS SECOND-CLASS MATTER MAY 19, 1913, AT THE POST OFFICE AT CINCINNATI, OHIO, UNDER THE ACT OF AUGUST 24, 1912

UNIVERSITY OF CINCINNATI RECORD

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1914-1915

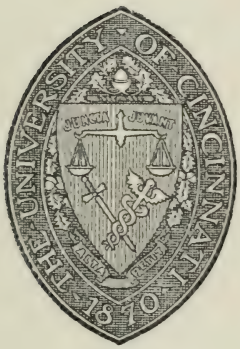

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TABLE OF CONTENTS

PART I

GENERAL STATEMENT

Calendar, ... 7
Departments of the University, ... 8
Administrative Officers, ... 9
General Information:
Foundation, ... 10
Buildings and Site, ... 13
Benefactors of the University, ... 13
Endowment Fund Association, ... 14
Benefactions, ... 14
University Library, ... 15
Municipal Reference Bureau, ... 17
Publications, ... 17
Museums, ... 18
Fellowships, Scholarships, and Prizes, ... 19
Alliance Française, ... 21
Athletics, ... 21
Carson Field, ... 21
Physical Training for Women, ... 22
Student Organizations, ... 22
Admission:
Special Students, ... 23
Students Entering from Other Colleges and Universities, 23
Admission to Advanced Standing, ... 23
Registration, ... 23
General Regulations, ... 25
Fees:
Tuition, ... 26
Special and Irregular Students, ... 27
External Courses, ... 27
Special Courses for Teachers, ... 27
Laboratory Fees,, ... 27
Graduation Fees, ... 28
Breakage Deposits, ... 28
Course for Teachers of Art, ... 28
Miscellaneous Fees, ... 28
Expenses, ... 29

PART II

THE GRADUATE SCHOOL

Faculty, ... 30
Admission, ... 31
Instruction, ... 32
Requirements for the Degree of Master of Arts, ... 32

Requirements for the Degree of Doctor of Philosophy, . . 32
Admission to Advanced Standing, ... 34
Special Arrangement for Graduate Students in Lane Seminary and in the Hebrew Union College, ... 34
Fellowships and Scholarships, ... 34
Courses of Instruction:
Anatomy, ... 35
Astronomy, ... 35
Biology, ... 35
Chemistry, ... 36
Economics, ... 37
Education, ... 37
English, ... 37
Geology and Geography, ... 37
German, ... 37
Greek, ... 38
History, ... 38
Latin, ... 38
Mathematics, ... 39
Mathematics (Applied), ... 39
Pathology and Bacteriology, ... 39
Philosophy, ... 39
Physics, ... 40
Physiology, ... 40
Political and Social Science, ... 40
Psychology, ... 40
Romance Languages, ... 40

PART III

McMICKEN COLLEGE OF LIBERAL ARTS

Faculty, ... 41
Requirements for Admission, ... 43
Entrance Conditions, ... 44
Entrance Examinations, ... 44
Schedule of Entrance Examinations, ... 45
Definition of Units in Subjects Required for Entrance:
English, ... 46
Latin, ... 48
Greek, French, ... 49
German, ... 51
Spanish, ... 52
Mathematics, ... 53
Physics, ... 54
Chemistry, ... 55
Zoology, ... 56
Botany, ... 56
Botany and Zoology, ... 57
Physical Geography, ... 57
Astronomy, ... 58
History, ... 58
Civics, Drawing, ... 59
Manual Training, Domestic Science, ... 59

Admission on Certificate from Accredited Schools, . . . 60
List of Accredited Schools. 60
List of Recognized Schools, ... 62
Accredited Schools of the North Central Association, . . 62
Requirements for the Bachelor of Arts Degree, ... 62
Outline of Studies in the College of Liberal Arts, . . . 64
Advisory System for the Election of Studies, ... 66
Special Arrangements:
Credit for Work Done in the College of Law, ... 67
Six-Year Combined Collegiate and Medical Course, . . 67
Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary, ... 67
Credit for Work Done in the Art Academy of Cincinnati, . 67
Credit for Work Done in the College for Teachers, . . 68
Courses of Instruction:
Astronomy, ... 69
Biblical Literature, ... 69
Biology, ... 70
Chemistry, ... 75
Economics, ... 80
Education, ... 82
English, ... 83
Geology and Geography, ... 88
German, ... 90
Greek, ... 92
History, ... 95
Latin, ... 98
Mathematics, ... 99
Philosophy, ... 102
Physical Education, ... 103
Physics, ... 104
Political and Social Science:
Political Science, ... 107
Social Science, ... 109
Psychology, ... 110
Romance Languages, ... 111
Six-Year Combined Collegiate and Medical Course, . . . 115
Drawing, Modeling, and Carving, ... 116

PART IV

COLLEGE FOR TEACHERS

Committee in Charge, ... 118
Faculty and Instructors, ... 118
General Statement, ... 119
General Regulations:
Program I, ... 119
Program II, ... 120
Program III, ... 121
Program IV, ... 122
Program V, ... 123
Program VI, ... 123
Program VII, ... 123

Special Courses for Teachers, ... 123
Requirements of the Cincinnati Board of Education, . . 124
Appointment Committee, ... 124
Courses of Instruction:
Education, ... 124
Biology, ... 128
English, ... 128
Geology and Geography, ... 129
History, ... 129
Philosophy, ... 130
Psychology, ... 131
Courses in Kindergarten Training, ... 131
Courses for Teachers of Art, ... 134
Home Economics, ... 136
Schedule of Lectures, First Semester, 1914-15, ... 138

CALENDAR

1914

Sept. 14, Monday.	Entrance examinations begin.
Sept. 17, Thursday. Sept. 18, Friday. Sept. 19, Saturday.	Registration days for the College of Liberal Arts and the College for Teachers.
Sept. 19, Saturday.	Entrance examinations end.
Sept. 21, Monday.	First semester begins for the College of Liberal Arts and the College for Teachers.
Sept. 21, Monday.	First registration day for the Graduate School.
Sept. 26, Saturday.	Last registration day for the Graduate School.
Nov. 26, Thursday.	Thanksgiving Day: a holiday. Recess of three days.

Recess from December 21, 1914, to January 2, 1915, Inclusive

1915

Jan. 4, Monday.	Classes resumed. Entrance examinations begin.
Jan. 9, Saturday.	Entrance Examinations end.
Jan. 25, Monday.	First semester examinations begin.
Feb. 4, Thursday.	First semester examinations end.
Feb. 5, Friday.	Registration day for the second semester of the College of Liberal Arts and of the College for Teachers.
Feb. 6, Saturday.	No classes.
Feb. 8, Monday.	Second semester begins for the College of Liberal Arts and the College for Teachers.
Feb. 8, Monday. Feb. 9, Tuesday. Feb. 10, Wednesday.	Registration days for the second semester of the Graduate School.
Feb. 22, Monday.	Washington's Birthday: a holiday.
May 7, Friday.	Oratorical contest for Jones Prizes.
June 11, Friday.	Second semester ends.
June 12, Saturday.	University Commencement Day.
June 14, Monday.	Entrance examinations begin.
June 19, Saturday.	Entrance examinations end.

DEPARTMENTS OF THE UNIVERSITY

The University comprises the following departments:

GRADUATE SCHOOL,

McMICKEN COLLEGE OF LIBERAL ARTS,

COLLEGE FOR TEACHERS,

COLLEGE OF ENGINEERING: Departments of Chemical, Civil, Electrical, Mechanical, and Metallurgical Engineering,

COLLEGE OF MEDICINE (The Ohio-Miami Medical College and the Clinical and Pathological School of the Cincinnati Hospital),

COLLEGE OF COMMERCE.

For special announcements of the various departments, except the Medical College, and for further information, address:

THE SECRETARY OF THE UNIVERSITY
CINCINNATI, OHIO

For special announcement of the Medical College, address:

THE DEAN of the College of Medicine
CLIFTON Ave., Cincinnati, Ohio

ADMINISTRATIVE OFFICERS

OF

THE GRADUATE SCHOOL, THE COLLEGE OF LIBERAL ARTS, AND THE COLLEGE FOR TEACHERS

CHARLES WILLIAM DABNEY, Ph. D.,LL. D., President of the University.
Office, 10 McMicken Hall.

FRANK W. CHANDLER, Ph. D., Dean of the College of Liberal Arts.
Office, 8 McMicken Hall.

JOSEPH E. HARRY, Ph. D., ... Dean of the Graduate School.
Office, 4 McMicken Hall.

WILLIAM P. BURRIS, A. M., L. H. D., Dean of the College for Teachers.
Office, 2 McMicken Hall.

FREDERICK C. HICKS, Ph. D., Dean of the College of Commerce and Supervisor of the Evening Academic Courses.
Office, 33 McMicken Hall.

EMILIE WATTS MCVEA, A. M., ... Dean of Women.
Office, 12 McMicken Hall.

JERMAIN G. PORTER, Ph. D., ... Director of the Observatory.
The Observatory, Mt. Lookout.

HENRY S. WEST, Ph. D., ... Director of School Affiliation.
Office, 2 McMicken Hall.

ALFRED BRODBECK, ... Director of Physical Education.
Gymnasium Building.

DANIEL LAURENCE, B. S., ... Secretary of the University.
Office, 5 McMicken Hall.

CHARLES ALBERT READ, A. B., Librarian of the University Library.
Van Wormer Library Building.

LELIA G. HARTMANN, B. L., ... Registrar.
Office, 7 McMicken Hall.

GRACE NAOMI MATTHEWS, A. B., ... Assistant Registrar.
Office, 7 McMicken Hall.

GENERAL INFORMATION

FOUNDATION

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869, the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile, an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874, the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At

length the city undertook to support the University in part by public taxation, the tax for this purpose being limited at first to three-tenths of one mill. In 1906 the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as heretofore.

In 1913 a law was passed providing that the levy for University and Observatory purposes shall not be "subject to any limitations of rates of taxation or maximum rates provided by law" except the maximum of five-tenths of a mill for the University and three-tenths of a mill for the Observatory, and the "further exception that the combined maximum rate for all taxes levied in a year in any city or taxing district shall not exceed fifteen mills." This law further provides that the levy shall include the amount necessary to pay interest on and sinking fund for all bonds issued for the University subsequent to June 1, 1910. The situation produced by the Smith one per cent tax law, under the provisions of which the income of the University was limited to the amount received in the year 1910, made this law necessary.

In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati. Then, in 1910, the friends of Dr. Joseph Eichberg, for many years an eminent Professor of Physiology in the Miami Medical College, who lost his life through a lamentable accident in the summer of 1908, presented the University with the sum of $45,000, to establish in the University the Joseph Eichberg Chair of Physiology. In 1911, Dr. Francis Brunning bequeathed his entire estate, with the exception of a few minor bequests, to the Endowment Fund Association of the University of Cincinnati, for the College of Medicine. This estate has yielded about $80,000. In 1912, Mrs. Floris A. Sackett and Mrs. Frances W. Gibson made bequests to the University, the exact value of which has not yet been determined.

In 1912, Mr. Harry Levy presented to the Board of Directors of the University of Cincinnati for the Endowment Fund of the College of Medicine, the sum of $50,000, to be known as "The Julie Fries Levy Endowment." Mr. Levy made this gift in honor of his mother and wishes the income used in furthering and disseminating medical knowledge.

In 1913, Mrs. Mary M. Emery presented to the Endowment Fund Association of the University of Cincinnati, the sum of

$125,000, to be used to endow the Chair of Pathology in the College of Medicine.

In 1913, Mrs. Henrietta Moos bequeathed $25,000 to the Endowment Fund of the University of Cincinnati for the College of Medicine, as a memorial to her husband, Herman M. Moos.

New departments were also added. In 1872, the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896, the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908, an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati."

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the City of Cincinnati.

In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected.

In 1912 the College of Commerce was organized for the purpose of providing opportunity for higher commercial education.

Evening Classes in the College of Liberal Arts were opened in 1912 in order that those persons whose occupations prevented them attending the day classes might have an opportunity to take college courses at night.

In 1912 a Bureau of City Tests was established in the Engineering College in connection with the Engineer's office of the Department of Public Service of the City. It will make all the tests of materials and supplies required by this and other city departments. A technical chemist has been employed to take direction of this

* For this purpose the city levies annually a special tax of one-twentieth of one mill.

work, and, as far as possible, it will be utilized to train students in the methods of such tests. It is hoped in this way to develop a course in municipal engineering.

BUILDINGS AND SITE

From 1875 to 1895, the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96, the north wing, known as Hanna Hall, was built for the Departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the Departments of Physics and Biology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. In 1912 this building was enlarged by the addition of a lecture room, a library, and another small dome. Since 1896, the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. A gymnasium, power plant, and engineering building, provided by the city, at a cost of $550,000, were completed in December, 1911.

A bond issue of $550,000 has been authorized to provide for the construction of a chemical laboratory, a woman's building, a stadium, and for making extensive repairs in McMicken Hall. Of this issue, bonds to the value of $100,000 have already been sold and the proceeds partly used in improving McMicken Hall.

BENEFACTORS OF THE UNIVERSITY

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Proctor, Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Moses F.

Wilson, Eugene F. Bliss, James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Chas. Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, Edward Miles Brown, Nathaniel Pendleton Dandridge, Mrs. Howard Breen, Robert William Hochstetter, Mrs. R. N. Hollingshed, Davis L. James, Catherine M. James, Ellen W. James, Annie A. James, Mr. and Mrs. O. J. Renner, Mrs. Antonia Wendte, Mary E. Dandridge, Mrs. Joseph Eichberg, the alumni of the University, Harry M. Levy, J. G. Schmidlapp, the Class of 1907, the estate of John B. Peaslee, and Alice L. Kuhn.

ENDOWMENT FUND ASSOCIATION

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President.
Jacob G. Schmidlapp, Vice-President.
Charles F. Windisch, Treasurer.
Howard C. Hollister, Secretary.

BENEFACTIONS

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

FORM OF BEQUEST TO THE UNIVERSITY OF CINCINNATI:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

FORM OF BEQUEST TO THE ENDOWMENT FUND ASSOCIATION:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the Fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any question relating to foundation to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The library is open from 8 A. M. to 9:30 P. M., on Monday and Friday; Saturday, 8 A. M. to 5 P. M.

The University Library, in this building, contains about 69,000 volumes and 10,000 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 300 periodicals. The library is provided with a card catalogue of its own books, and also with card catalogues of the books (non-fiction) received since 1905, by the Public Library of Cincinnati.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by his son, Mr. Theodore A. Bruehl.

The Wilson Library, consisting of works of English, French, and Italian literature, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts, and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown, was presented to the University by Mrs. Edward Miles Brown. It consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, at present about 1,000 volumes, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The library has many volumes on history and economics, purchased from the proceeds of an endowment provided in 1894 by the will of Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 5,600 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has rooms for its valuable collections of books, pamphlets, and other articles in the Van Wormer Library. This collection comprises over 25,000 volumes and 69,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts. Students of the University have access to this library and may withdraw books from it under certain conditions.

The total number of books, including duplicates, in the Van Wormer Library Building is about 99,600 volumes and 79,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	4,000 volumes
The Library of the College of Medicine	3,000 volumes
The Library of the Municipal Reference Bureau	70 volumes
Total	7,070 volumes

The libraries of the University, excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 75,500 volumes and 10,000 pamphlets.

The Public Library, 443,146 volumes; the Mercantile Library, containing about 83,453 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum and the College of Music, are open to University students.

MUNICIPAL REFERENCE BUREAU

The Municipal Reference Bureau was organized in 1913 under the Department of Political Science of the College of Liberal Arts. Its quarters in the City Hall are adjacent to the Council Chamber and the rooms of the Charter Commission. The library of this Bureau contains material relating to all phases of city government and municipal activities. This Bureau is primarily for the use of Council and the administrative officers of the city, but is available to the general public and students as well. Through this agency, students in political and social science are enabled to familiarize themselves more intimately with the actual operation of both the city government and the organizations and institutions working for political and social betterment.

PUBLICATIONS

The official publications of the University are as follows:

THE UNIVERSITY RECORD. This publication is issued at intervals during the year and comprises the President's Annual Report, the Annual Catalogue, and Announcements of the Graduate School, College of Liberal Arts, College for Teachers, College of Engineering, College of Medicine, and College of Commerce.

THE UNIVERSITY STUDIES. This publication is issued in parts and contains the results of research by members of the faculty or by other persons connected with the University of Cincinnati. A price list of the different numbers of this publication may be obtained by addressing the office of the Press.

Student publications of the University are as follows:

THE CINCINNATIAN. The Cincinnatian is the University Annual, and is edited and published by the members of the Junior Class.

THE UNIVERSITY WEEKLY NEWS. This paper is the official student bulletin, and is issued every week during the University year by a student board of editors.

THE SCRIBE. This magazine appears once a month and is literary in tone. The students of the University are the contributors.

MUSEUMS

The Museum of Natural History consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous rocks; the Wetherby collection of rocks and minerals; and lastly, a series of specimens illustrating the chemical industries. The Department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks, and fossils. Among recent valuable additions are the U. P. James collection of fossils and minerals, the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch I. Carson; and several group mounts of large animals by the custodian of the Museum.

In 1912 the heirs of the late Samuel A. Miller loaned to the University his large collection of fossils (more than 8,000 labels), gathered from various parts of America and Europe. In return for the use of this collection for educational purposes, the University has provided for its exhibition in specially adapted show-cases in a large well-lighted room devoted especially to that purpose. The collection is for sale and is open at all times for inspection by prospective buyers. It is earnestly hoped that some friend may purchase it for this institution. The University has also on loan and similarly exhibited the H. M. Norris collection of Indian implements.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of the "Winged Victory," "Aphrodite of Melos," "Faun Playing the Flute," "Esquiline Venus," "Capitoline Venus," and a pediment of the temple of Zeus at Olympia. Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, Corinth, and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

THE GRADUATE SCHOOL

THE D. A. R. FELLOWSHIP IN AMERICAN HISTORY. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

THE HANNA FELLOWSHIP IN PHYSICS. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

THE ALLIANCE FRANÇAISE SCHOLARSHIP, of $300, was established in 1904 by the Alliance Française of the City of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

THE ARMSTRONG-HUNTER MEMORIAL FUND, valued at $1,000, was established in 1910 in memory of Miss Sarah J. Armstrong and Miss Clara Hunter, by eighty of their former pupils. This fund will be used to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

In addition to the above, the University offers ten scholarships in several departments which exempt their holders from the payment of tuition fees.

THE McMICKEN COLLEGE OF LIBERAL ARTS

THE CORNELIUS GEORGE COMEGYS SCHOLARSHIP, with an income of fifty dollars, was founded in 1899 by the Old Endowment Fund Association, which was composed of the alumni of the University. This scholarship is awarded annually to a meritorious undergraduate.

THE MCMICKEN HONORARY SCHOLARSHIPS are awarded annually to the five Juniors who have the best scholastic standing, according to the records in the Registrar's office.

THE THOMS HONORARY SCHOLARSHIPS are awarded annually to the six Sophomores and the six Freshmen who have the best scholastic records.

THE JULIUS FLEISCHMANN SCHOLARSHIPS. Thirteen scholarships of $75 each, offered for the years 1909-10, 1910-11, 1911-12, 1912-13, 1913-14, by ex-Mayor Julius Fleischmann. They cover the first year's tuition, in the College of Liberal Arts, of thirteen nonresidents, who are members of the graduating classes of the accredited schools outside of Cincinnati.

THE OPTIMIST CLUB SCHOLARSHIPS. Two scholarships of $75 each, offered in 1910, for four succeeding years, by a resident of

Cincinnati who wished his identity to remain unknown. According to the wishes of the donor, these scholarships will be awarded in the College of Liberal Arts to non-resident students who have attended the University for at least one year and need assistance.

THE JONES PRIZES. The first Jones Prize of forty dollars was founded in 1892 by the Honorable Frank J. Jones, and is awarded annually to that member of the Senior class in the College of Liberal Arts who writes and pronounces the best English oration. The subjects are chosen by the Dean and the Chairman of the Board of Directors. A committee consisting of three citizens of Cincinnati is appointed by the Chairman of the Board of Directors to judge the contest. The second Jones Prize of twenty dollars was founded by Mr. Jones in 1901. It is awarded to that member of the Senior class whose oration is judged by the committee to be second in merit. These prizes are permanently endowed.

THE EDWARD MILES BROWN PRIZE FOR EXCELLENCE IN ENGLISH. This prize of fifty dollars was established in 1908, by a provision of the will of the late Professor Edward Miles Brown. It is awarded annually to that member of the Senior class who has attained the highest excellence in English during his four years' undergraduate course.

THE HENRY HOCHSTETTER PRIZE IN CHEMISTRY. This prize was established in 1909 by Mr. Robert Hochstetter, of the Class of 1895, in memory of his brother, Henry Hochstetter. It is to be awarded annually for the best graduating thesis in Chemistry, and is open to both students of Liberal Arts and Engineering. The successful candidate is nominated by a committee consisting of the head of the Department of Chemistry and two members of the Cincinnati Section of the American Chemical Society.

THE ROBERT PATTERSON MCKIBBIN MEMORIAL PRIZE, a gold medal of the value of twenty-five dollars, was established in 1911 by the Reverend William McKibbin and family, in memory of their son Robert Patterson McKibbin, who died in 1910, while a member of the Junior class of this University. This prize aims to hold up before the male students of the University the ideals of manhood. It will be awarded to that young man of the Senior class who, in the judgment of the faculty, is the best embodiment of these ideals.

THE UNION BETHEL SCHOLARSHIPS IN SOCIAL SCIENCE. Four scholarships of $75 each, offered for the year 1913-14, by Mr. J. O. White, resident director of the Union Bethel Settlement. These scholarships were awarded to four advanced students in the Department of Social Science who carried on sociological investigations at the Union Bethel.

For the fellowships, scholarships, and prizes of the various colleges, consult their several announcements.

THE ALLIANCE FRANÇAISE

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students of the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of three hundred dollars in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

ATHLETICS

Athletics are so controlled in the University that they play an important part in the college life of the student without seriously interfering with his interest in class-room work.

All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: three hours per week for all members of the Freshman class, and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A large part of the work is done out of doors during good weather, and such games as football, baseball, basket ball, tennis and track athletics are a part of the students' training. Lessons in boxing, wrestling, and fencing are also given to students interested in this form of exercise.

All athletics and gymnastics are in charge of the Director of Physical Education and his assistants.

CARSON FIELD

An Athletic Field has recently been provided, which is one of the best college athletic fields in the country. It contains a baseball diamond, a football gridiron, and a quarter-mile cinder track, with a one hundred and twenty-four straight-away extending in front of

the new grand stand. The proximity of this field to the gymnasium makes it a particularly valuable addition to the athletic equipment of the University. Its location between three hilltops, which form a natural amphitheater, affords opportunity for thousands of people to view the games.

The new gymnasium with its modern equipment—cork-covered running track, white-tiled swimming pool, and spacious locker rooms—is the most complete institution of its kind in the West.

PHYSICAL TRAINING FOR WOMEN

A special instructor has charge of the work in Physical Training for young women, which is required during the Freshman and Sophomore years. The work in the gymnasium is supplemented during the fall and spring with outdoors games.

STUDENT ORGANIZATIONS

The following student organizations met regularly throughout the academic year, 1913-14.

The Academic Club, composed of the men of the College of Liberal Arts; The Athletic Council; Blue Hydra, a permanent organization devoted to the study of Biology; The Chemical Engineer's Club; The Chemist's Club; The Co-op Club; The Debating Council; The Dramatic Club; The French Club; The Freshman Girl's Club; The German Club; The History Club; The Junior Girl's Club; The Literary Society; Men's Glee and Mandolin Clubs; Men's Pan Hellenic Association; The Senior Girl's Club; The Sophomore Girl's Club; The Speaker's Club, an oratorical and debating society composed entirely of young men; The Student Section of the American Society of Mechanical Engineers; The Student Section of the American Institute of Electrical Engineers; The University Club, composed of representatives from the student clubs, the fraternities, and the four classes; Women's Glee Club; Women's Pan Hellenic Association; A chapter of the Y. W. C. A.

The Woman Student's League is an organization open to all women students of the University and to the women of the faculty. Regular meetings are held, at which lecturers of note address the members on subjects connected with the general and economic interests of women.

A Student Tribunal for Self-Government exists in the College of Engineering. It consists of five members—three Seniors and two Juniors.

Membership in the Three Arts Club of Cincinnati is open to women students in the College of Liberal Arts.

ADMISSION

Special Students.—Persons at least twenty years of age and qualified to do University work may be admitted as special students to lectures and laboratory courses in the College of Liberal Arts and in the College for Teachers. They will be required to furnish documentary evidence to the Director of School Affiliation, and to satisfy the heads of the departments concerned, of their ability to carry on successfully the courses which they desire to enter.

Before any special student may become a candidate for a degree he must satisfy the entrance requirements. All special students are amenable to the same regulations as apply to regular students in matters of examination, probation, discipline, etc.

Students Entering from Other Colleges and Universities.—An undergraduate of a college or university desiring to enter the McMicken College of Liberal Arts or the College for Teachers must present to the Director of School Affiliation satisfactory evidence that he has done a sufficient amount of preparatory work to meet the regular entrance requirements, together with a certificate of honorable dismissal from the college or university last attended. He will be given credit for work of university grade in accordance with the provision for "Admission to Advanced Standing."

Admission to Advanced Standing.—Students may be admitted to advanced standing upon presentation of a certificate from a college of approved standing. All applications for advanced standing must be made within three weeks after matriculation to the Director of School Affiliation, and must be accompanied by a statement of the work done, signed by the proper officials of the college from which the applicant comes, and by a marked copy of the catalogue or by a written description in detail of the courses for which advanced credits are desired. In courses where note books or drawings or both are required, these also must be presented. The students applying for advanced standing must first have satisfied the entrance requirements the same as regular students.

REGISTRATION

New students will register in 1914 on Thursday and Friday, September 17 and 18; upper classmen on Saturday, September 19. In 1915 they should register on Friday, February 5. Students registering on any other days than those designated above will be required to pay a registration fee of one dollar.

No person will be admitted to any course after the beginning of the semester, unless a good and sufficient excuse for not entering at the opening of the semester be presented to the Dean; and *in no event will any person be permitted to enter the work of any semester after the close of the third week of that semester.* In accordance with this regulation no person will be admitted to the work of the first semester of 1914-15 after October 10, 1914; for the second semester, the last day of admission will be February 27, 1915.

Directions for Registration

Freshmen

1. Take to the Advisory Committee for the Election of Studies the Certificate of Admission received from the Director of School Affiliation, and receive from the Committee a Course Card; after consultation, fill out the Course Card in accordance with the rules and regulations of the Advisory Committee (see page 66);
2. Take the Certificate of Admission, the Registration Blank, and the Course Card to the Registrar;
3. Pay the library fee (also tuition and laboratory fees when such are required) to the Clerk of the Board;
4. Receive from the Clerk of the Board a receipt for matriculation;
5. File the Course Card received from the Advisory Committee in a box prepared for that purpose in the Registrar's office.

Sophomores

Every Sophomore must Register with his own Adviser in accordance with the rules and regulations of the Advisory Committee (see page 66). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Upper Classmen

Every upper classman must fill out his Course Card under the direction of his Adviser (see page 67). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Special Regulations

On the Course Card each course must be designated by the department and the number of the course, especial title, and the number of hours' credit, e. g.:

English 1: Rhetoric and Composition..... 3
Mathematics 1: Algebra, Trigonometry, and
Analytical Geometry 4

In filling out election blanks especial care should be taken to note the advertised hours of courses, in order that conflicts may be avoided.

All students who expect to become teachers should confer with the Dean of the College for Teachers before filling out their Course Cards.

No change will be permitted on the Course Card after the expiration of three days from the last day of registration.

All Course and Schedule Cards must be filled out and deposited in the boxes provided for that purpose before four o'clock on the last registration day.

GENERAL REGULATIONS

Each student shall, at the beginning of the year, leave his local address at the office of the Registrar and shall promptly report all subsequent changes of address.

Unit of Instruction.—The unit of instruction is one hour per week for one semester. Two and one-half hours of actual work in the laboratory, shop, or drafting-room, are considered equivalent to one recitation hour and the preparation therefor. Credit will be given for the number of hours officially published with the course, and for no more. University work not regularly registered is forbidden.

Absences in the College of Liberal Arts.—All absences of students, from any cause whatsoever, are recorded in the Registrar's office. If thirty or more absences are recorded against a student, two extra credits must be made in order to obtain the A. B. degree. No absences are excusable except those incurred by students representing the University in some public exercise outside of the city. Application for these excuses must be made to the Dean in advance.

Probation.—A student in the College of Liberal Arts who receives a grade below D in one-half of his work at the mid-term, or at the end of any semester, shall be put upon probation for the next half semester of college work. Such a student, if similarly delinquent at the end of his probation, shall cease to be a member of the University.

If it shall be necessary to place a student upon probation a second time, after an interval has elapsed since the first time, it shall be within the power of the Dean to dismiss the student the moment his grades fall below D in one-half of his work.

Readmittance After Suspension.—Students in the College of Liberal Arts suspended for inefficient work during the Freshman year may not return to the University as Freshmen until they have passed the entrance examinations of that year.

GRADES.—The scale of marks for recording grades is as follows: A, 90-100; B, 80-89; C, 70-79; D, 60-69, passed; E, 50-59, conditioned; F, 0-49, failed.

In case a student withdraws from the University during any semester, credit will not be given for any of the work elected for that semester.

HONORABLE DISMISSAL.—It is required as a condition of honorable dismissal, that every student who wishes to withdraw from the University shall submit to the Registrar a written request to that effect.

A copy of the "Rules for the Guidance of Students" may be obtained at the Registrar's office.

FEES

Tuition in the Graduate School, the College of Liberal Arts, and the College for Teachers is free to regular students who are residents of Cincinnati.

All fees must be paid *in advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Deans are authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

TUITION FEES

All regular non-resident students in the College of Liberal Arts and in the College for Teachers, are charged a tuition fee of $75.00 per year, payable in installments of $37.50 per semester. If not paid during registration days, but if paid within the two weeks succeeding the last registration day, the fee is $45.00 per semester. If not paid as above, but if paid within the following two weeks, the fee is $50.00 per semester. If not paid within four weeks after the last registration day, further attendance upon classes will be refused.

Students in the College of Liberal Arts who are residents of the city of Cincinnati, and elect any work whatsoever in the College of Engineering, are charged the full tuition fee of $37.50 per semester.

Tuition in the University Evening Courses is free (a) to all residents of Cincinnati; (b) to all teachers* who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year. Non-residents, other than teachers, are charged tuition at the rate of $3.00 per credit hour per semester. A credit hour is one hour's work a week carried through a semester or half year. Laboratory fees will be charged for courses in the laboratory sciences.

* Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

Fees for Special and Irregular Students

All special students, and irregular students (i. e., students who have satisfied the entrance requirements, but take less than twelve hours a week by special permission), in the College of Liberal Arts and in the College for Teachers, and all non-resident students in the Graduate School, are charged tuition at the rate of $3.00 per credit hour, per semester, in advance. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to $9.00 a semester, or $18.00 a year. If not paid within one week after the last registration day, an additional fee of $1.00 will be charged. If not paid within four weeks after the last registration day, attendance upon classes will be refused.

External Courses

A fee of five dollars will be charged for admission to *each* External Course.

Special Courses for Teachers*

Teachers enrolled in *Special Courses for Teachers* in the University, pay the regular library fee of $5.00 per year. Tuition in these courses is free (a) to all teachers in public schools who are residents of the city; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year, payable in advance.

The laboratory fee in a teacher's course is $5.00 per year.

Laboratory Fees

All laboratory fees are payable strictly *in advance.*

A student shall not be permitted to enter a laboratory course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Biology, $10.00 per semester.

Chemistry, $15.00 per semester; breakage deposit, $10.00.

Geology, $5.00 per semester; $2.50 per semester for a course having but one laboratory period per week.

Metallurgy, $7.50 per semester.

Physics, $10.00 per semester; $5.00 per semester for a course having but one laboratory period per week.

Psychology, $5.00 per semester.

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* Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

Graduation Fees

All graduation fees must be paid at least two weeks before the day appointed for conferring the degree.

A graduation fee of $5.00 is charged every candidate for the degree of bachelor of arts, for the degree of bachelor of arts in education, and for an engineering degree. A graduation fee of $10.00 is charged a candidate for the degree of master of arts, and a fee of $20.00 is charged for the degree of doctor of philosophy, and for the degree of doctor of medicine.

Breakage Deposits

At the beginning of the year, a breakage deposit of $10.00 will be required of each student who takes chemistry. Five dollars of this amount must be kept permanently upon deposit until all accounts with the Department of Chemistry have been settled. For the remaining $5.00 a coupon ticket will be issued, with which supplies and apparatus may be obtained at the store-room. Should this coupon-ticket become exhausted, the student must purchase a new ticket ($5.00) before supplies will be issued to him at the store-room.

Course for Teachers of Art

The fees in the Special Course for Teachers of Art are as follows: matriculation fee, $5.00; tuition fee for non-residents, $18.00 (for one year's instruction in psychology and the history of education); laboratory fee, $25.00 per year; tuition fee, payable at the Art Academy, $25.00 per year.

Miscellaneous Fees

Gymnasium Fee.—A gymnasium fee of $5.00 per annum ($2.50 per semester) will be charged all men in the College of Liberal Arts, in the College for Teachers, and in the College of Engineering, taking six or more hours of work per week. The same fee will be charged all men in the Graduate School who elect twelve hours of work per week.

A fee of $5.00 per annum ($2.50 per semester) will be charged all other men in the University who desire to avail themselves of the privileges of the gymnasium.

During the temporary use of the men's gymnasium by the classes for women, a gymnasium fee of $1.00 per semester will be charged the women students.

Library Fee.—All students in the Graduate School, in the Colleges of Liberal Arts and Engineering, except fifth year co-operative students, in the College for Teachers, in the College of Commerce, and in the Evening Academic Courses, must pay a library fee of $5.00 per year at the opening of the session.

Late Registration.—Students who apply for registration or submit schedules of study on days other than those designated will be required to pay a fee of $1.00.

Special Examinations.—A fee of $1.00 will be charged for each supplemental examination for the removal of conditions, and this fee must be paid even though the condition is removed without a supplemental examination. A fee of $5.00 will be charged for entrance examinations on days other than those specified in the calendar. Every candidate who applies for the removal of a condition must present to the head of the department in which the condition occurred a receipt showing that the candidate has paid the fee of $1.00, before the said head of department may report the removal of a condition to the Registrar.

Summer Course.—A fee of $10.00 will be charged for the use of instruments in the summer courses in the College of Engineering.

EXPENSES

	Graduate School Liberal Arts, or College for Teachers	Engineering	Medicine
Tuition Fees	$75 00	$75 00	$150 00
Library Fees	5 00	5 00	.....
Library and Matriculation Fee, payable each year....	.....	.....	‡$5 00
Gymnasium Fee.....	5 00	5 00	
Laboratory Fees	*	$35 to $45	.....
Books	$20 to $25	$25 to $30	$45 to $60
Board and Room, per week..	$5 to $8	$5 to $8	$5 to $8
Total Expense per year.....	$325 to $450	$350 to $450	$375 to $500

The Secretary of the University will furnish information regarding suitable boarding places in the vicinity of the University.

‡ To be paid by students who entered the Medical College previous to September, 1913.

* Laboratory fees vary according to the courses taken.

THE GRADUATE SCHOOL

FACULTY AND INSTRUCTORS

Charles William Dabney, Ph. D., LL. D., President of the University.
Jermain Gildersleeve Porter, Ph. D., Director of the Observatory and Professor of Astronomy.
Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Commerce.
Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
John Miller Burnam, Ph. D., ... Professor of Latin.
Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Joseph Edward Harry, Ph. D., Professor of Greek and Dean of the Graduate School.
Merrick Whitcomb, Ph. D., ... Professor of History.
Louis Trenchard More, Ph. D., ... Professor of Physics.
Burtis Burr Breese, Ph. D., ... Professor of Psychology.
William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education.
John William Hall, A. M., Professor of Elementary Education.
Stephen Elmer Slocum, B. E., Ph. D., Professor of Applied Mathematics.
Nevin M. Fenneman, Ph. D., Professor of Geology and Geography.
Lauder William Jones, Ph. D., ... Professor of Chemistry.
Guy Allan Tawney, Ph. D., ... Professor of Philosophy.
Frank Wadleigh Chandler, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
Phillip Ogden, Ph. D., . . . Professor of Romance Languages.
Paul Gerhardt Woolley, B. S., M. D., . Professor of Pathology.
Martin H. Fischer, M. D., Joseph Eichberg Professor of Physiology.
Henry McElderry Knower, Ph. D., . . . Professor of Anatomy.
Harris Miller Benedict, Ph. D., ... Professor of Botany.
Henry S. West, Ph. D., . . Professor of Secondary Education.
Selden Gale Lowrie, Ph. D., . . Professor of Political Science.
——— ———, ... Professor of Zoology.
Harry Shipley Fry, Ph. D., . . Associate Professor of Chemistry.
William Buchanan Wherry, A. B., M. D., Associate Professor of Bacteriology.

Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Claude M. Lotspeich, Ph. D., . Associate Professor of German.
Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Edward F. Malone, A. B., M. D., Assistant Professor of Anatomy.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.
James Aston, Ch. E., ... Assistant Professor of Metallurgy.
Cyrus DeWitt Mead, A. M., Assistant Professor of Elementary Education.
Henry G. Hartmann, Ph. D., Assistant Professor of Philosophy.
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science.
Clarence D. Stevens, A. M., . . Assistant Professor of English.
Leroy James Cook, A. M., ... Instructor in French.
Clarence A. Nash, A. M., . . Instructor in Physical Chemistry.
Walter H. Bucher, Ph. D., ... Instructor in Geology.
James Dysart Magee, Ph. D., ... Instructor in Economics.

INFORMATION FOR STUDENTS

ADMISSION

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School. Students will not be admitted to the Graduate School after the third week of the semester.

INSTRUCTION

The work of each candidate for a graduate degree shall be under the direction of an Advisory Committee, composed of the Dean of the Graduate School and the heads of the departments in which the work is taken.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

In order to receive the Master's degree the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than twenty-four units of graduate instruction, at least twelve units of which shall be elected in one department. In case the candidate has previously elected the work in the department as a major for the completion of the undergraduate degree, he shall, under the direction of the head of the department concerned, elect sufficient work in some allied department to complete the required twelve units. The requirement of a thesis is optional with the head of the department in which the major subject is taken. Wherever a thesis for the Master's degree is required, it must be filed with the Registrar, not less than six weeks before the close of the final semester of graduate study. The work for the Master's degree shall occupy the attention of the student for at least one full year in residence in the Graduate School. Students taking work in courses open to graduates and undergraduates shall be required to complete an additional amount of work estimated to be fifty per cent of the regular undergraduate requirements. Candidates for the degree of Master of Arts must pass an oral examination before a committee of the faculty.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

For the Doctor's degree, three years of graduate study will ordinarily be required. Where the student's college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last

year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided that such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German. In order to receive the degree of Doctor of Philosophy, the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE

Courses in Hebrew taken in Lane Seminary and in the Hebrew Union College by graduates of recognized colleges and universities may count to the extent of twelve hours for the Master of Arts degree.

FELLOWSHIPS AND SCHOLARSHIPS

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. (For particulars see page 19). The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

COURSES OF INSTRUCTION

For detailed description of the courses given in the Graduate School, see the Announcements of the College of Liberal Arts and the College for Teachers.

ANATOMY

7. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the head of the department.

Professor Knower, Assistant Professor Malone.

ASTRONOMY

For Courses Open to Graduates See Page 69.

BIOLOGY

To pursue advanced courses in botany or zoology the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES

To enter upon work for the degree of Master of Arts in zoology students must have completed Courses 1a, 2a, 3b, 4b, 15, 17b, 18b, 19a, 13b, 14b, 20a, or their equivalents, while in botany the required preliminary courses are 5a, 6a, 7b, 8b, 35, 24a, 25a, 26b, 27b, or their equivalents. (See Biology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When botany or zoology is chosen as a minor for the Degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in zoology or botany. The requirements for a higher degree, when botany or zoology is chosen as a major subject, are adequately stated under the general requirements for degrees (page 32).

Primarily for Graduates

30. Current Problems in Zoology.
Assistant Professor Wieman.

40. Current Problems in Botany. Professor Benedict.

31. Research. Hours to be arranged.
Professor Benedict, Assistant Professor Wieman, and Assistant Professor Chambers.

For Other Courses Open to Graduates See Page 72.

CHEMISTRY

SPECIAL REQUIREMENTS FOR HIGHER DEGREES

The Degree of Doctor of Philosophy

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12a, 13a. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the advanced courses required in connection with the choice made. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12a and 13a (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree

A candidate for the Master's degree must present a thesis embodying the results of some experimental work, or a written account in some detail of a subject suggested by the instructor under whose direction the student has been placed.

Primarily for Graduates

30. Research.
Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch,
Assistant Professor Aston.

35a. Some Special Problems and Theories of Organic Chemistry. Professor Jones.

40. Journal Club Meetings. Papers by instructors and advanced students.

For Other Courses Open to Graduates See Page 77.

ECONOMICS

(The Sinton Professorship)

For Courses Open to Graduates See Page 81.

EDUCATION

Education 1, 3, 5, 7, 9, 11, and 12 are open to graduate students. Courses 1, 9, and 11 may be counted for credit towards a graduate degree, provided students do satisfactory pieces of independent work and embody the results of the same in acceptable written theses. For the number of credits allowed, the hours at which the courses are given, and the instructors having charge of the same, see Announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

For Graduates Only

20. Seminary.—Elizabethan Literature in its Continental Relations. T., 4:00-6:00. Professor Chandler.

For Courses Open to Graduates See Page 86.

GEOLOGY AND GEOGRAPHY

For Courses Open to Graduates See Page 88.

GERMAN

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

[11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.] *Second semester*, T., 4:00-6:00. Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6. Omitted in 1914-15.

7. Middle High German.—W., 4:00-6:00. Associate Professor Lotspeich.

8. Old High German.—M., 4:00-6:00. Associate Professor Lotspeich.

[13. Gothic.] W., 4:00-6:00. Associate Professor Lotspeich.
Omitted in 1914-15.

[26. Old Norse.] M., 4:00-6:00.
Omitted in 1914-15. Associate Professor Lotspeich.

[9b. German Seminary.] *Second semester*, T., 4:00-6:00.

Omitted in 1914-15. Professor Poll.

For Other Courses Open to Graduates See Page 91.

GREEK

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.
Professor Harry.

7. Greek Seminary.—The Historians (1914-15); The Attic Orators (1915-16). M., 3:00-5:00. Professor Harry.

Open to graduates and to those who have completed the undergraduate courses in Greek.

For Other Courses Open to Graduates See Page 94.

HISTORY

For Courses Open to Graduates See Page 96.

LATIN

Primarily for Graduates

(Hours in all cases to be arranged)

9. Latin and Romance Palæography.—Professor Burnam.
Prerequisite: Four years of undergraduate work and ability to read French and German.

10. Latin Seminary.—Virgil. Professor Burnam.

12. Graduate Study.—Credit according to the work elected and completed under the direction of the teaching staff of the Department. Professor Burnam.

MATHEMATICS

Primarily for Graduates

35. Advanced Algebra, Part III.—M., Th., 4:00-6:00.
Professor Hancock.

For Other Courses Open to Graduates See Page 100.

MATHEMATICS (APPLIED)

Primarily for Graduates

11b. Fourier's Series and Spherical Harmonics.—*Second semester*, Th., 4:00-6:00; S., 9:30-10:30. Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—*First semester*, M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

For Graduates Only

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid or gaseous bodies.
Professor Slocum.

For Other Courses in Mathematics See Page 100.

PATHOLOGY AND BACTERIOLOGY

8. Research.—Open to any qualified person after consultation with the head of the department.
Professor Woolley, Associate Professor Wherry.

PHILOSOPHY

Primarily for Graduates

19. The Philosophy of Immanuel Kant with special reference to its historical development.—T., 12:30-2:30.
Assistant Professor Hartmann.

21. The Philosophy of Religious Experience.—Th., 1:00-3:00.
Professor Tawney.

14. Types of Philosophy.—Th., 3:00-5:00.
Professor Tawney.

For Other Courses Open to Graduates See Page 102.

PHYSICS

For Graduates Only

7. Lectures on Theoretical Physics. Professor More.

25a. Theoretical Mechanics.—See under Applied Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Professor More and Associate Professor Allen.

For Other Courses Open to Graduates See Page 105.

PHYSIOLOGY

(The Joseph Eichberg Professorship)

7. Research.—Open to any qualified person after consultation with the head of the department. Professor Fischer.

POLITICAL AND SOCIAL SCIENCE

For Courses in Political and Social Science Open to Graduates See Pages 107, 109.

PSYCHOLOGY

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Th., 3:00-5:00. Professor Breese.

6a. Educational Psychology.—*First semester.* Hours to be arranged. Professor Breese.

For Other Courses Open to Graduates See Page 110.

ROMANCE LANGUAGES

For Courses Open to Graduates See Pages 112, 113.

McMICKEN COLLEGE OF LIBERAL ARTS

FACULTY AND INSTRUCTORS

Charles William Dabney, Ph. D., LL. D., President of the University.

Jermain Gildersleeve Porter, Ph. D., Director of the Observatory and Professor of Astronomy.

Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Commerce and Supervisor of the Evening Academic Courses.

Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.

John Miller Burnam, Ph. D., ... Professor of Latin.

Max Poll, Ph. D., . . . Professor of the Germanic Languages.

Joseph Edward Harry, Ph. D., ... Professor of Greek.

Merrick Whitcomb, Ph. D., ... Professor of History.

Louis Trenchard More, Ph. D., ... Professor of Physics.

Burtis Burr Breese, Ph. D., ... Professor of Psychology.

Stephen Elmer Slocum, B. E., Ph. D., Professor of Applied Mathematics.

Nevin M. Fenneman, Ph. D., Professor of Geology and Geography.

Lauder William Jones, Ph. D., ... Professor of Chemistry.

Guy Allan Tawney, Ph. D., ... Professor of Philosophy.

Frank Wadleigh Chandler, Ph. D., Professor of English, Ropes Professor of Comparative Literature, and Dean of the College of Liberal Arts.

Phillip Ogden, Ph. D., . . . Professor of Romance Languages.

Harris Miller Benedict, Ph. D., ... Professor of Botany.

Henry S. West, Ph. D., ... Director of School Affiliation.

Selden Gale Lowrie, Ph. D., . . Professor of Political Science.

——— ———, ... Professor of Zoology.

Harry Shipley Fry, Ph. D., . Associate Professor of Chemistry.

Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.

Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.

Claude M. Lotspeich, Ph. D., . Associate Professor of German.

Emilie Watts McVea, A. M., Assistant Professor of English and Dean of Women.

Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.

Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.

Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and English.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.
James Aston, Ch. E., ... Assistant Professor of Metallurgy.
Henry G. Hartmann, Ph. D., Assistant Professor of Philosophy.
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science.
Clarence D. Stevens, A. M., . . Assistant Professor of English.
Alfred Brodbeck, ... Director of Physical Education.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Arthur James Kinsella, A. M., ... Instructor in Greek.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
Platt Bishop Evens, Mechanician and Instructor in Laboratory Arts.
Cora May Box, A. M., ... Instructor in Zoology.
Marguerite Gray, A. B., . . . Instructor in Physical Education.
Vernon Lantis, A. M., ... Instructor in Botany.
Leroy James Cook, A. M., ... Instructor in French.
Eleanor Katherine Nippert, A. B., . . . Instructor in German.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.
Clarence A. Nash, A. M., . . Instructor in Physical Chemistry.
Edwin W. Esslinger, A. M., . Instructor in Analytical Chemistry.
Walter H. Bucher, Ph. D., ... Instructor in Geology.
James Dysart Magee, Ph. D., ... Instructor in Economics.
——— ———, ... Instructor in English History.
Edward Mack, A. M., D. D., . . Lecturer on Biblical Literature.
Anatole Le Braz, Professor in the University of Rennes, Lecturer on the Ropes Foundation for the Comparative Study of Literature.

Other Appointments for 1914-15

Schachne Isaacs, A. M., ... Assistant in Psychology.
Raphael Isaacs, A. M., . Assistant in Embryology and Zoology.
Edward Joseph Lorenz, A. M., . . . Hanna Fellow in Physics.

——— ———, ... D. A. R. Fellow in American History.
Emma Andriessen, A. M., . . . Graduate Assistant in German.
Ralph Edward Oesper, A. M., Graduate Assistant in Chemistry.
Leonora Neuffer, A. B., . . . Graduate Assistant in Chemistry.

REQUIREMENTS FOR ADMISSION TO THE McMICKEN COLLEGE OF LIBERAL ARTS

Candidates for admission as undergraduates must be at least sixteen years of age. They must give evidence of having completed satisfactorily an amount of preparatory study represented by sixteen units, a unit being the quantity of work represented by a full year's study, of five periods per week, of one of the subjects listed below, and the completion of the assignment specified for that subject in the section headed "Definition of Units." Of these sixteen units every candidate for admission to the McMicken College of Liberal Arts must present the following:

English—Three units, in which there can be no "condition."

Mathematics—One unit in Algebra and one unit in Plane Geometry.

History—One unit.

Language—Three units, from the five languages: Latin, Greek, French, German, Spanish; two units must be in the same language. Candidates who intend to pursue the study of Latin in the University must present four units in Latin.

In addition to these fixed requirements the candidate must offer a number of units selected from the list of subjects below, sufficient, with the units specified above, to amount to a total of sixteen. The number of units that may be offered in any subject is shown in the following table:

	Number of Units Accepted for Admission		
	Minimum		Maximum
English	3	required	or 4
Latin	1	Three units required, two of which must be in one language	or 2 or 3 or 4
Greek	1		or 2 or 3
French	1		or 2 or 3 or 4
German	1		or 2 or 3 or 4
Spanish	1		or 2
General or Medieval and Modern History	1	One unit required	or 1
Ancient	½		1
English	½		or 1
American	½		or 1
American and Civics	1		1
Algebra	1	required	or 1½ or 2
Geometry, Plane	1	required	or 1
Geometry, Solid	½		or ½
Trigonometry	½		or 1
Civics	½		½
Physics	1		1
Chemistry	1		1
*Zoology	1		1
*Botany	1		1
Physical Geography	½		or 1
Astronomy	½		½
Drawing	1		1
Manual Training	1		or 2 or 3 or 4
Domestic Science	1		or 2 or 3 or 4

ENTRANCE CONDITIONS

Students who are deficient in not more than two units of the sixteen required for admission, provided their credit includes three units of English, may be admitted conditionally to the College of Liberal Arts. All such entrance conditions must be removed before the student is allowed to register as a regular student for a second year of residence at the University.

ENTRANCE EXAMINATIONS

Examinations for admission will be held on September 14, 15, 16, 17, 18, 19, 1914. In 1915 they will be held on January 4, 5, 6, 7, 8, 9, and on June 14, 15, 16, 17, 18, 19.

Students who desire to take these examinations must obtain permission beforehand from the Director of School Affiliation. All applications for permission to take the entrance examinations should be made at least two days before the first day of the examination period. Some of the examinations may be taken in the spring and the remainder in the fall if so desired. Students who apply for entrance examinations at times other than the days specified will be charged a fee of five dollars.

Examinations for candidates without graduation certificates.—A candidate for admission to the University, coming from one of the accredited schools, who is not a graduate of such school, will not be admitted to the entrance examinations within one year after leaving such preparatory school, unless recommended for examination by the principal of the school from which he comes.

Students intending to take the entrance examinations should consult the statement of the entrance requirements, as printed on a preceding page, and arrange to take their examinations

(a) in the fixed requirements, and

(b) in enough additional subjects to make a total of sixteen units.

The work covered by each unit or group of units in the various subjects may be found on the following pages. Specimen entrance examination questions will be furnished free of charge on application to the Director of School Affiliation.

SCHEDULE OF ENTRANCE EXAMINATIONS

September 14, 1914; January 4, and June 14, 1915:

8:30–11:00	English	3 units
11:00–12:00	English	1 unit additional
1:00– 3:00	Physics	1 unit
3:00– 4:00	Solid Geometry	½ unit
4:00– 5:00	Physical Geography	½ or 1 unit

September 15, 1914; January 5, and June 15, 1915:

8:30–10:30	Latin	1 or 2 units
10:30–12:00	Latin	1 or 2 units additional
1:00– 3:00	Chemistry	1 unit
3:00– 4:00	Astronomy	½ unit
4:00– 5:00	Civics	½ unit

September 16, 1914; January 6, and June 16, 1915:

8:30–10:30	French	1 or 2 units
10:30–12:00	French	1 or 2 units additional
1:00– 2:30	Plane Geometry	1 unit
2:30– 4:00	Algebra	1 unit
4:00– 5:00	Advanced Algebra	½ or 1 unit additional

September 17, 1914; January 7, and June 17, 1915:

8:30– 9:30	Ancient History	½ or 1 unit
9:30–10:30	American History	½ or 1 unit
10:30–12:00	General or Medieval and Modern History	1 unit
1:00– 2:00	English History	½ or 1 unit
2:00– 3:00	American History and Civics	1 unit
3:00– 5:00	Spanish	2 units

September 18, 1914; January 8, and June 18, 1915:

8:30–10:30	German	1 or 2 units
10:30–12:00	German	1 or 2 units additional
1:00– 3:00	Zoology	½ or 1 unit
3:00– 5:00	Botany	½ or 1 unit

September 19, 1914; January 9, and June 19, 1915:

8:30–10:30	Greek	1 or 2 units
10:30–11:30	Greek	1 unit additional
11:30–12:00	Drawing	1 unit
1:00– 2:00	Trigonometry	½ or 1 unit
4:00– 5:00	Manual Training	4 units
4:00– 5:00	Domestic Science	4 units

DEFINITION OF UNITS

Detailed statements showing the exact amount of work required for each unit or group of units in the various subjects are here presented:

ENGLISH COMPOSITION AND LITERATURE

The examination in English will consist of two parts, one relating to composition and the other relating primarily to literature.

(a) The candidate should possess a knowledge of English grammar, including terminology, inflections, syntax, phrases and clauses; and of the simple principles of rhetoric, including the construction of the paragraph and of the sentence. He will be required to write on some subject familiar to him; and his composition must be satisfactory in grammar, spelling, and punctuation, and must be plain and natural in style.

(b) The candidate will be required to show his acquaintance with good literature and his knowledge of literary values. The books adopted by the National Conference on Uniform Entrance Requirements, as given below, are recommended in preparation for this part of the examination; but any course of equivalent amount and value will be received. The examination is intended to test rather the candidate's power to judge literary values so that he may read with intelligence and appreciation, than his knowledge of specific books.

I. Three Units.—The preparation should include the following subjects:

Composition.—There should be practice in writing at regular and frequent intervals throughout all the years of the preparatory course. Special attention should be given to the proper structure of sentences and paragraphs, and the method of planning or outlining an essay.

Grammar.—It is expected that the applicant will be familiar with the essentials of English grammar, and will be able to explain the construction of sentences that occur in the classics he has read.

English Classics.—The following books are recommended for reading and study:

For Reading in 1914 and 1915

I (two to be selected): The *Old Testament,* comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey,* with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad,* with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid.* The *Odyssey, Iliad,* and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II (two to be selected): Shakespeare's *Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; Henry the Fifth; Julius Caesar.*

III (two to be selected): Defoe's *Robinson Crusoe,* Part I; Goldsmith's *Vicar of Wakefield;* Scott's *Ivanhoe* or *Quentin Durward;* Hawthorne's *House of the Seven Gables;* Dickens' *David Copperfield* or *Tale of Two Cities;* Thackeray's *Henry Esmond;* Mrs. Gaskell's *Cranford;* George Eliot's *Silas Marner;* Stevenson's *Treasure Island.*

IV (two to be selected): Bunyan's *Pilgrim's Progress,* Part I; the *Sir Roger de Coverley* papers in *The Spectator;* Franklin's *Autobiography* (condensed); Irving's *Sketch Book;* Macaulay's *Essays on Lord Clive* and *Warren Hastings;* Thackeray's *English Humorists; Selections* from Lincoln, including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the Last Public Address, and the Letter to Horace Greeley, along with a brief memoir or estimate; Parkman's *Oregon Trail;* either Thoreau's *Walden,* or Huxley's *Autobiography* and selections from *Lay Sermons,* including the addresses on Improving Natural Knowledge, A Liberal Education, and A Piece of Chalk; Stevenson's *Inland Voyage* and *Travels with a Donkey.*

V (two to be selected): Palgrave's *Golden Treasury* (First Series), Books II and III, with especial attention to Dryden, Collins, Gray, Cowper, and Burns; Gray's *Elegy in a Country Churchyard* and Goldsmith's *Deserted Village;* Coleridge's *Ancient Mariner* and Lowell's *Vision of Sir Launfal;* Scott's *Lady of the Lake;* Byron's *Childe Harold,* Canto IV, and *Prisoner of Chillon;* Palgrave's *Golden Treasury* (First Series), Book IV, with especial attention to Words-

worth, Keats, and Shelley; Poe's *Raven,* Longfellow's *Courtship of Miles Standish,* and Whittier's *Snow-Bound;* Macaulay's *Lays of Ancient Rome* and Arnold's *Sohrab and Rustum;* Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City.*

For Intensive Study in 1914 and 1915

Shakespeare's *Macbeth;* Milton's *L'Allegro, Il Penseroso,* and *Comus;* either Burke's *Speech on Conciliation with America,* or both Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* either Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns.*

All the books should be read with care and appreciation, but particular attention should be given, with regard to form, structure, and style, to those intended for intensive study. In addition, the student should have some definite knowledge of the lives of the authors read and of the history of their times.

II. Four Units.—For four units in English composition and literature the preparation should extend throughout the four years of the high school course. Besides the subjects mentioned above, the applicant should have studied the outlines of English literary history. His study should be based upon one of the recent manuals of English literature, the study of the text being accompanied by as much reading as possible of representative authors.

LATIN

I. First Unit.—The student should have digested some Beginner's Book like that of Coy, or Collar and Daniel.

II. Second Unit.—Caesar's *Gallic War,* Books I-IV, or an equivalent amount selected from the remaining portions of that work. It is expected that in the first year's preparation the student has mastered the declensions, comparisons, and verbal inflections, knows the leading rules of syntax, and possesses some vocabulary. Along with Caesar there should be some exercise in Latin Composition, a wider and deeper acquaintance with grammatical principles of the language, and a good vocabulary. Sallust's *Catiline* or an equivalent amount of the *Jugurtha* may be substituted for two books of Caesar. It is furthermore suggested that the teacher, if possible, vary the Caesar lessons by selections from Books V-VII. The Department of Latin is also willing to accept Miller and Beeson's second year Latin Book as a substitute for Caesar.

III. Third Unit.—Cicero, *In Catilinam*, I-IV, and *Pro Archia*, with more practice in composition. It is also preferred that the student should study an additional oration or short treatise, e. g., *de Amicitia*, or selections from the *Letters*. He should also begin the practice of writing continuous prose.

IV. Fourth Unit.—Vergil's *Aeneid*, I-VI, with scanning and prosody. An equivalent amount of verse from *Aeneid*, VII-XII, or Ovid will be accepted in place of *Aeneid*, III and V. If circumstances permit, it is very advantageous to let Ovid precede Vergil. It is preferable that the composition done during this year be based on Cicero.

GREEK

I. First Unit.—White's *Beginner's Book* or an equivalent. Grammar and composition work.

II. Second Unit.—Xenophon's *Anabasis*, Books I and II. Grammar and composition work.

III. Third Unit.—In addition to the work outlined in paragraphs I and II, the following:

Xenophon, *Anabasis*, Books III and IV.

Homer, *Iliad*, Books I-III.

Composition.

Grammar: Babbitt, Goodell, Goodwin, or Hadley-Allen

FRENCH

I. One Unit.—

(a) The translation at sight of very simple French prose.

(b) The translation into French of easy sentences to test the candidate's familiarity with elementary grammar.

(c) One full year of five periods a week is necessary to meet the requirements in one unit. The first one hundred and fifty pages in Fraser and Squair's *French Grammar* may be taken as a standard of the amount of grammar which should be covered during that period.

II. Two Units.—

(a) The translation at sight of ordinary prose. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the regular verbs; the auxiliaries être, avoir; the more frequent irregular verbs.

(c) The translation into French of sentences to test the candidate's familiarity with elementary grammar.

Two full years of five periods a week are necessary to meet the requirements in two units. Fraser and Squair's *French Grammar*, complete, may be taken as a standard of the amount of grammar

which should be covered during that period. Not less than three hundred duodecimo pages should be read from the works of at least three different authors. Suitable texts for these two units are: *Le Siège de Berlin* and *La Dernière Classe*, Daudet; *La Mère Sauvage*, Maupassant; *Le Tour de la France*, Bruno; *Le Petit Chose*, Daudet; *Sans Famille*, Malot; *La Tache du Petit Pierre*, Mairet; *La Poudre aux Yeux*, Labiche et Martin; *Le Voyage de M. Perrichon*, Labiche et Martin; *La Cigale chez les Fourmis*, Legouvé et Labiche.

III. Three Units.—A continuation for one year of work just outlined. The candidate should be able to read at sight ordinary French prose or poetry, to translate into French easy English prose, to answer questions involving a more thorough knowledge of the essentials of French syntax, especially the ordinary uses of tenses and modes. It is expected that the candidate for three units will have worked through a grammar and will have read five or six hundred pages of French during three years of five periods a week. Suitable texts for these three units are: The plays of Labiche, Scribe, etc.; *Gil Blas*, Lesage; *Le Tour de la France*, Bruno; *La Belle Nivernaise*, Daudet; *Les Fourberies de Scapin*, *Le Médicin Malgré Lui*, Molière; Voltaire's historical writings; *Le Cid*. Corneille; Coppée's poems, etc.

IV. Four Units.—

(a) The translation at sight of standard French. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the irregular verbs and the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

(c) The translation into French of a connected passage of English prose.

(d) The writing of a theme in French on a given topic.

Four full years in a good preparatory school are necessary to meet the requirements for four units. Not less than six hundred pages should be read from the works of at least five different authors. Suitable texts besides those given above are *Colomba*, Mérimée; *La Mare au Diable*, Sand; *Pêcheur d' Islande*, Loti; *La Canne de Jonc*, Vigny; *Horace*, Corneille; *L' Avare* and *Le Bourgeois Gentilhomme*, Molière; *Athalie*, Racine; *Le Gendre de M. Poirier*, Sandeau; *Récits des Temps Mérovingiens*, Thierry; *L' Expédition de Bonaparte en Egypte*, Thiers.

The student should have constant practice in giving paraphrases and abstracts. He should be trained to write French from dictation in order to enable him to understand lectures delivered in that language.

GERMAN

I. One Unit.—

(a) The translation at sight of very simple German prose.

(b) The translation into German of easy sentences, to test the candidate's familiarity with elementary grammar.

The candidate ought to have read not less than one hundred pages of easy German, such as is found in Hewitt's or Harris' *German Reader.*

II. Two Units.—

(a) The translation at sight of simple German prose.

(b) The translation into German of easy connected prose, to test the candidate's familiarity with elementary grammar. The requirement in elementary grammar includes the conjugation of the weak and strong verbs; the declination of articles, adjectives, pronouns, and such nouns as are readily classified; the prepositions; the simpler uses of the modal auxiliaries; the elements of syntax, especially the rules governing the order of words.

The candidate ought to have read not less than two hundred pages of easy German, such as is found in Hewett's or Harris's *German Reader.*

In general, to obtain two units in German, two years' work in a good preparatory school is required.

III. Three Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate ought to have read not less than four hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Wilhelm Tell;* Lessing's *Minna von Barnhelm;* Goethe's *Hermann und Dorothea;* Wildenbruch's *Das edle Blut;* Fontane's *Vor dem Sturm:* Moser's *Kopnickerstrasse.*

Generally speaking, three years' work in a good preparatory school will be necessary in order to meet the requirements for three units.

IV. Four Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar. The candidate will be expected to show a thorough knowledge of

accidence, the principal uses of prepositions and conjunctions, and the essentials of syntax, especially the uses of the modal auxiliaries and of the subjunctive and infinitive modes.

The candidate ought to have read not less than six hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Jungfrau von Orleans;* Goethe's *Iphigenie;* Freytag's *Die Journalisten, Soll und Haben, Bilder aus der deutschen Vergangenheit;* Riehl's *Culturgeschichtliche Novellen.*

In general, to obtain four units in German, four years' work in a good preparatory school is required.

SPANISH

I. One Unit.—

(a) The translation at sight of simple Spanish prose.

(b) The essentials of grammar, including the conjugations of the regular and the most frequently used irregular verbs. The translation into Spanish of short sentences, intended to test the candidate's knowledge of the essential points in grammar. Conversation and dictation.

In general, one year's work in a preparatory school, or its equivalent, is necessary to meet the requirements for one unit. The candidate will be expected to have worked through a short Spanish grammar, or the principal parts of a more complete one, and to have read at least one hundred pages of simple Spanish. Suitable texts for one unit are: *Spanish Reader,* Bronsby; *Victoria y Otros Cuentos,* Asensi; *Gil Blas,* Padre Isla; *El Pájaro Verde,* Valera; *O Locura o Santidád,* Echegaray; *Zaraguëta,* Carrión y Vital Aza; *El Clavo,* Alarcón, etc.

II. Two Units.—

In general, two years' work in a preparatory school, or its equivalent, will be needed to meet the requirements for two units. In addition to the work outlined in Paragraph I, the candidate will be expected to have worked through an elementary composition book and to have read from two to three hundred pages of modern Spanish. Suitable texts for the second unit are: *El Capitán Veneno,* Alarcón; *El Sí de las Niñas,* Moratín; *Doña Perfecta,* Galdós; *Guzmán el Bueno,* Gil y Zárate; *Cuentos Alegres,* Taboada; *Legends, Tales, and Poems,* Bécquer; *El Haz de Leña,* Nuñez de Arce; *José,* Valdés, etc.

MATHEMATICS

I. Algebra. One Unit. Definitions.—Integral numbers. Rational numbers. Irrational numbers. The six fundamental operations of algebra. Algebraic expressions. Rational Algebraic expressions. Application of the four fundamental operations to Rational Algebraic expressions. The use of parentheses. Especial emphasis given to working within the parentheses. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, simple and complex. Simple equations, both numerical and literal, containing one or more unknown quantities. Systems of equations. Problems depending on linear equations. Involution and evolution of monomials and polynomials. Radicals, including rationalization. Exponents, including the fractional and negative. Imaginary quantities. Elementary treatment of quadratic equations. The solution of simple problems in quadratic equations.*

II. Algebra. One and one-half units.—In addition to Paragraph I, the following: The completion of quadratic equations, both numerical and literal. A standard form for the solutions of these equations. The discriminant condition for equal roots, real and imaginary roots. Relations among the roots and the co-efficients of the equation. The nature of the roots when the different co-efficients approach zero. Simultaneous quadratic equations. Systems of equations, simple and quadratic. Property of quadratic surds and solution of equations containing radicals. Problems leading to quadratic equations. Ratio and proportion. The binomial theorem for positive integral exponents.

III. Algebra. Two units.—In addition to the work outlined in Paragraphs I and II, the following: Convergence of infinite series. Binomial theorem with fractional negative exponents. Exponential and logarithmic series. Formation of logarithms to base e, to base 10. Properties and application of logarithms. The progressions. Continued fractions.

IV. Plane Geometry. One unit.—The work required in Plane Geometry is practically the equivalent of the first five books in Wells', Sanders', or Wentworth's Geometry. Emphasis should be given to

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* It is assumed that the pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Familiarity with the metric system is pre-supposed. Some of these problems should be chosen from mensuration, from physics and from commercial life. The use of graphic methods and illustrations, particularly in connection with the solution of equations, is also expected. On the other hand, the student must be guarded against the tendency to become mechanical in his algebraic work. Algebra is not to be used as a T-square. Above all, the student should be thoroughly grounded in the fundamental principles, operations and definitions. It is recommended that Wells's Academic Algebra, Wentworth's Algebra, or an equivalent be used.

the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of lines and plane surfaces.

V. Solid Geometry. One-half unit.—The usual theorems and constructions of good text-books. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of surfaces and solids.

VI. Plane Trigonometry. One-half unit.—Definitions and relations of the six trigonometric functions as ratios, not as lines. Circular measurement of angles. Proofs of principal formulas, in particular those for the sine, cosine and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expression for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

VII. Trigonometry. One unit.—In addition to Paragraph VI, the following: Solutions of triangles, right-angled and oblique, requiring a knowledge of logarithms. Application to heights and distances. Demoivre's Theorem. Properties of spherical triangles. Formulas connecting the sides and angles of spherical triangles. Napier's Analogies. Gauss' Theorem. Solution of spherical triangles.

PHYSICS

One unit.—The candidate must be well prepared in the elementary theory of the subject and must present a note-book showing the quantitative work done by him in the laboratory. One full year of four to five periods a week is necessary to meet the requirements for one unit.

The instruction in the class-room should include qualitative lecture-room experiments, the solution of numerous problems, and the study of some one standard text-book, such as Hall and Bergen.

Every candidate for admission on examination is required to present a laboratory note-book, signed by the teacher, containing the results of quantitative experiments performed by him in the laboratory. At least thirty quantitative experiments must have been performed, of which ten must be in mechanics, and which must also include three of the subjects, light, heat, electricity, and sound. The thirty experiments are to be selected from some standard list such as the list adopted by the National Education Association, which may be found in *The Teaching of Chemistry and Physics*, Smith and Hall, Chapter X.

Laboratory note-books will be examined for neatness, language,

accuracy, and proficiency in physics. They should be called for within one month after presentation.

CHEMISTRY

One unit.—The student's preparation should consist of an elementary course in chemistry (one year)* of the character taught in the better class of high schools. It should include:

(a) Individual laboratory work, to the extent of at least one-third of the time;

(b) Instruction by lecture table demonstration, to be used when expensive apparatus or superior skill in manipulation is indispensable;

(c) The study of at least one standard text-book, to the end that the pupil may gain a connected view of the subject.

Either in the class-room or by experimental treatment in the laboratory, the course should take up for consideration the important modes of occurrence, the principal methods of preparation, the essential physical and chemical properties, and the recognition of the elementary substances and their chief compounds, commonly considered in the standard text-books. More detailed study should be given to those of frequent occurrence, or of especial scientific importance.

The candidate should be able to state the significance of such commonly used terms as homogeneous body, solution, element, compound. By the use of definite examples, he should be able to show what kinds of facts have led to the formulation of such essential laws as the laws of definite and of multiple proportions, the law of combining weights, the laws of the expansion of gases, and the law of volumes of reacting gases.

He should be qualified to give a statement of the nature of the processes by the aid of which chemists determine equivalent weights, choose molecular weights, and select atomic weights; furthermore, to explain the significance of chemical symbols, and the manner of arriving at chemical formulæ (not graphic) after the necessary quantitative data are obtained in the laboratory.

Such terms as valence, acid, base, salt, neutralization, hydrolysis, oxidation, reduction, decomposition, dissociation, electrolysis, ionization, should have a meaning to the student, and he should be prepared to define them correctly, at least by well-chosen illustrations, if they cannot be defined precisely by words.

At the time of and as part of the examination in chemistry, every student must present a note-book, containing a description of at least forty experiments. The note-book must include drawings of essential pieces of apparatus used, and an index of the experiments. The

* The course should cover from thirty-five to forty weeks, with four to five periods per week. Two hours of laboratory work count as one period of recitation.

laboratory note-book should be called for within one month after presentation.

Text-books recommended: McPherson and Henderson, Hessler and Smith, Newell, Bradbury, Remsen (Briefer Course), Torrey, and Story and Lindsay. Other texts than the one prescribed should be available to the student for reference. Ostwald's *Conversations on Chemistry* will be found stimulating and suggestive for collateral reading.

ZOOLOGY

One unit.—The candidate will be required to present his original note-book of practical laboratory study, together with the dates and the endorsement of his teacher, certifying that the book is a true record of the pupil's own work. The note-book should contain carefully labeled outline drawings of the chief structures studied in at least fifteen different animals, together with notes on the same. The note-book will be graded as one-third of the examination. The student will be expected to know the classification of animals into phyla and classes, and he must be able to state the chief characteristics and to compare the general life activities of examples of each of the principal classes. He must know the general plan of internal structure of one vertebrate (frog or fish) in general comparison with the human body; an arthropod (crustacean or insect); an annelid (earth-worm or Nereis); a coelenterate (hydroid, hydra or sea-anemone); a protozoan (a ciliate and amoeba when possible). A mollusk (clam or mussel), an echinoderm or a second vertebrate may be substituted for any of the above types. A knowledge of the very general features of cell division, of the cellular nature of germ-cells, and the essentials of embryological development will be expected, as well as some understanding of the main facts involved in the struggle for existence, adaptation to environment and variation of individuals.

One full year of at least five periods a week is necessary to meet the requirements for one unit.

Such books as Benedict's *Animal Adaptations,* Colton's *Descriptive and Practical Zoology,* Harvey's *Introduction to the Study of Zoology,* or Kingsley's *Comparative Zoology* cover this ground adequately. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY

One unit.—A laboratory note-book containing drawings of the parts of two kinds of flowering plants, of a fern, moss, liverwort, toadstool, lichen, and mould, must be presented with the certificate of his teacher that it is the student's own work. The note-book will count for one-third of the work.

A knowledge of the names and distinguishing characteristics of the different phyla and the classes will be required, and the kind of alternation of generations found in the three highest phyla must be known. A general knowledge of the principal plant societies and the relation between their structures and environments, as well as an understanding of the adaptations by which the flowering plant does its necessary work are important requirements.

Bergen, Bessey, Atkinson, Caldwell, Coulter, and Leavitt are representatives of the type of elementary texts accorded recognition. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY AND ZOOLOGY

One unit.—A unit will be accepted only when Botany and Zoology have each been studied for half a year in one continuous course which extends throughout the year. Such a course will be reckoned as a one-unit course in Biology. A half year of one, independent of the other, will not be accepted. It is strongly recommended that the student devote an entire year to Botany or to Zoology for one unit, instead of combining Botany and Zoology for a single unit.

At least half of the work must have been laboratory work guided by definite directions. A laboratory note-book containing drawings and observations upon at least ten kinds of animals (both vertebrate and invertebrate) and ten kinds of plants (both flowering and non-flowering) must be presented with the certificate of the teacher that it is the student's own work. The student will be required to answer in writing general questions upon familiar animals, such as the frog, fish, earth-worm, paramoecium, crayfish, etc., and upon common plants, such as the fern, moss, mushroom, and simple flowering plants. In both Botany and Zoology a knowledge of the names and distinguishing characteristics of the different phyla and their classes will be required. The note-book will count for one-third of the work.

PHYSICAL GEOGRAPHY

One-half unit.—The scope of the work required for one-half unit in Physical Geography is represented by the standard modern text-books, some of which are named below. This includes the earth as a whole, atmosphere, ocean and land, with special emphasis on the work of water on the land in making topographic features. Entrance examinations may include simple interpretations of topographic maps, weather maps, and such charts as are given in text-books, the pointing out of features of scientific importance in such pictures as are used in text-books, and simple demonstrations with globes.

Dryer, *Lessons in Physical Geography;* Tarr, *New Physical Geography;* Gilbert and Brigham, *Introduction to Physical Geog-*

raphy; Davis, *Physical Geography;* Ward, *Practical Exercises in Elementary Meteorology;* and *Physiography of the United States* (10 National Geographic Monographs), are recommended as suitable texts.

One unit.—For a sufficiently thorough and extended knowledge of the subject, and at the option of the examiner, a credit of one unit may be given. Examinations for one unit's credit assume a knowledge of the larger text-books, a greater familiarity with laboratory exercises, and such a knowledge of the United States as will enable the candidate readily to cite illustrations of all topographic forms. One full year of four to five periods a week is necessary to meet the requirements for one unit.

ASTRONOMY

One-half unit.—The student should be familiar with:

(*a*) Such fundamental notions and definitions as are necessary to locate celestial bodies.

(*b*) The names and positions of the most conspicuous stars and constellations, and be able to trace the positions of the ecliptic across the sky at certain times during the year.

(*c*) The most important facts concerning the form, dimensions, mass, density, rotation and orbital motion of the earth, including seasons, tides, eclipses, and other dependent phenomena; also methods for determining the mass of the earth.

(*d*) The essentials concerning the sun, moon, and planets, including methods for determining their respective distances, motions, etc.

(*e*) The various hypotheses of the stellar universe and cosmogony.

Every student should visit a well-equipped observatory at least twice, once during the day to examine the apparatus, and once at night to view the heavens.

HISTORY

I. General History, or Medieval and Modern History. One Unit.—General History: Myers, Barnes, or G. B. Adams (complete); Medieval and Modern History: Munro and Whitcomb, Myers, Thatcher and Schwill, Harding's *Essentials,* or Robinson's *History of Western Europe* (complete).

II. English History. One unit.—English History: Montgomery, Walker, Andrews, Cheyney, Larned or Wrong (complete). (Where half time is given to this subject a half unit may be offered.)

III. Ancient History. One unit.—Ancient History: Myers, Seignobos, West, or Wolfson (complete). (Where half time is given to the subject a half unit may be offered.)

IV. American History. One unit.—American History: Adams and Trent, Channing, Larned, McLaughlin, Montgomery (student's), McMaster, or Hart's *Essentials* (complete).

V. American History and Civics. One unit.—See list in IV for American History. For Civics, James and Sanford: *Government in State and Nation,* or an equivalent text.

CIVICS

One-half unit.—James and Sanford: *Government in State and Nation,* or an equivalent text. (See V under History above.)

DRAWING

One unit.—One unit for entrance will be allowed for Freehand Drawing or Mechanical Drawing, or both. The student must have done the equivalent of at least two years' work of not less than four periods a week of forty-five minutes each.

The work in Freehand Drawing should include outline drawing from models, principles of light and shade, application of conventional forms, ornaments, design, etc.

The course in Mechanical Drawing should cover lettering, simple geometric problems, projections, solution of problems of helix, cycloid, parabola, etc.

The candidate for admission on examination must present at the time of, and as a part of, his examination a full set of drawings, with the teacher's certificate that they are the candidate's work.

MANUAL TRAINING

Manual Training Including Shop Work and Mechanical Drawing.—Credit will be allowed in this subject to the extent of from one to four units according as one, two, three, or four years are devoted to the work; but it must be done in accordance with the regulations governing laboratory work; that is, twice the time must be given to the subject each week as is given to a regular academic subject.

The course must include carpentry, wood turning, pattern making, foundry work, forging, and machine work, and the proper courses in drawing must accompany such work.

The candidate for admission on examination must present at the time of, and as part of his examination, a certified list of courses completed by him, the drawings for the same, and such statements of his work as will give an adequate idea of the efficiency of the course.

DOMESTIC SCIENCE

One to four units of credit is allowed in this subject according as one, two, three, or four years are given to the work; but it must be done in accordance with the regulations governing

laboratory work; that is, twice the time should be given to this work each week as is given to the academic studies which it displaces. The course should include the drawing and art work which usually accompany a first-class course in this subject. The first two years should include a study of textiles, drafting of patterns, and the making of dresses, and the designing and construction of hats. The last two years of work should consist of the study of cooking, chemistry of foods, home construction and sanitation, dietetics, food adulteration, bacteriology, laundering, decorating, and home economics.

ADMISSION ON CERTIFICATE FROM ACCREDITED SCHOOLS

Work of satisfactory grade (not lower than 70 per cent) will be accepted from graduates of the University's accredited schools in lieu of the entrance examinations upon the presentation of the proper certificate, signed by the principal of the school, certifying to the work of the candidate. All certificates presented for admission must specify the work actually done, the time devoted to each subject, and the grade received in each course. Blank forms will be furnished upon application to the Director of School Affiliation.

These certificates, properly made out, should be sent to the Director of School Affiliation, University of Cincinnati, Cincinnati, Ohio, as soon as possible after graduation, and at least five days before the first day of registration. Upon receipt of the certificate, the Director of School Affiliation will pass upon the application, and if it is satisfactory, will send a card of admission, which should be presented to the Registrar at the opening of the session. If the certificate is not satisfactory, the candidate will be informed, so that he may prepare himself for the entrance examinations.

A candidate from an accredited school who is not a graduate of such school will not be admitted upon certificate at all, but must enter by examination in accordance with the rule given above under the heading "Entrance Examinations."

*LIST OF ACCREDITED SCHOOLS

The following preparatory schools and high schools are on the accredited list of the University of Cincinnati. This list is subject to change from year to year, and each school is visited from time to time by a representative of the University:

* Superintendents or principals who may desire to have their schools accredited by the University, should address the Director of School Affiliation.

CITY	NAME OF SCHOOL	PRINCIPAL
Bellevue, Ky.....	High School.....	*W. P. King
Cincinnati, O.....	Oakhurst Collegiate School.....	Miss H. F. Kendrick
Cincinnati, O.....	The Bartholomew Clifton School..	Miss E. A. Ely Mary F. Smith
Cincinnati, O.....	Franklin School.....	J. E. White G. S. Sykes
Cincinnati, O.....	The College Preparatory School for Girls.....	Mary Doherty
Cincinnati, O.....	The H. Thane Miller School.....	Mrs. H. Miller Emma L. Parry
Cincinnati, O.....	Hughes High School.....	E. D. Lyon
Cincinnati, O.....	Walnut Hills High School.....	‡‡A. T. Henshaw
Cincinnati, O.....	Woodward High School.....	Pliny A. Johnston
Cincinnati, O.....	University School.....	Wm. E. Stilwell
Cincinnati, O.....	Ohio Military Institute.....	*A. M. Henshaw S. P. C. Roberts §C. B. Wood
Cincinnati, O.....	Hartwell High School.....	Arthur Powell
Cincinnati, O.....	Madisonville High School.....	C. M. Merry
Cincinnati, O.....	Pleasant Ridge High School.....	T. L. Simmermon
Covington, Ky.....	High School.....	H. S. Cox *H. O. Sluss
Danville, Ky.....	Kentucky College for Women.....	‡John C. Acheson
Dayton, O.....	Steele High School.....	C. L. Loos, Jr. *E. J. Brown
Delhi, O.....	Mt. St. Joseph on the Ohio Academy	Sister Eveline
Glendale, O.....	High School.....	*J. C. Chapin
Glendale, O.....	Glendale College.....	‡Jane R. DeVore
Hamilton, O.....	High School.....	C. H. Lake *Darrel Joyce
Jeffersonville, Ind...	High School.....	Emmett Taylor *C. M. Marble
Lawrenceburg, Ind..	High School.....	Lydia A. Sembach *J. W. Riddle
Lebanon, O.....	High School.....	C. H. Bruner *C. H. Young
Lockland, O.....	High School.....	*C. F. Sharp
Ludlow, Ky.....	High School.....	*W. D. Reynolds C. O. Morgan
Maysville, Ky.....	High School.....	Earl F. Chase *J. W. Bradner
Middletown, O.....	High School.....	Elsor Heater *N. D. O. Wilson
Milford, O.....	High School.....	J. F. Hardin *F. P. Timmons
Newport, Ky.....	High School.....	*J. A. Sharon Wm. A. Evans
Norwood, O.....	High School.....	W. W. McIntire *W. S. Cadman
Oldenburg, Ind.....	Academy of the Immaculate Conception.....	Sister M. Clarissa
St. Bernard, O.....	High School.....	Mr. Trisler
Wyoming, O.....	High School.....	*C. S. Fay Evelyn M. Prichard

* Superintendent § Commandant ‡ President ‡‡ Acting Principal.

LIST OF RECOGNIZED SCHOOLS

The work of the following schools is recognized by the University. Graduates of these schools will be given entrance credit without examination for such work as they have completed in a satisfactory manner:

CITY	NAME OF SCHOOL	PRINCIPAL
Cincinnati, O.....	East Night High School.....	Albert Schwartz
Cincinnati, O.....	West Night High School.....	E. W. Wilkinson
Dayton, Ky.....	High School.....	J. M. McVey L. N. Taylor, Supt.
Highlands, Ky.....	High School.....	F. A. Cosgrove
Loveland, O.....	High School.....	John Morris, Supt.
Terrace Park, O.....	High School.....	E. H. Foster
Williamsburg, O.....	High School.....	R. C. Franz

ACCREDITED SCHOOLS OF THE NORTH CENTRAL ASSOCIATION

Graduates of the secondary schools approved by the North Central Association of Colleges and Secondary Schools will be admitted to the University of Cincinnati in accordance with the provision for "Admission on certificate from accredited schools."

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS*

The degree of Bachelor of Arts is the only degree conferred upon graduates of the College of Liberal Arts.

One credit in the scale of University work is a subject taken for one period a week for one semester. In all laboratory courses, two and one-half hours in the laboratory are considered as equivalent to one recitation hour and the preparation therefor. Students who

* The curriculum, as here described, will go into effect September 17, 1914. Freshmen will follow this curriculum in its entirety.

Sophomores will satisfy the requirements of the last two years, and as far as possible those of the first two years.

Juniors will satisfy the requirements as announced in the catalogue of 1913-14, and the requirements for the last two years as announced above.

Seniors will satisfy the requirements for the degree of Bachelor of Arts as published in 1913-14.

have satisfied the requirements for admission, but who take less than twelve hours per week, are called "irregular students," and they must pay a tuition fee in every instance. (See "Fees.") No student is permitted to elect courses in more than five departments in any one semester.

All students who are candidates for the degree of Bachelor of Arts must fulfill the following requirements:

Each student must obtain 124 credits. Of these credits, 56 to 60 must be taken in prescribed subjects, 4 in physical education, and 30 to 34 under the direction of the student's Adviser in the major groups of studies. The remainder may be freely elected. No student, however, may count toward his 124 credits for graduation more than 6 credit hours of work marked "D," or poor, in any one semester. But this restriction shall not operate to prevent his counting courses so marked toward the completion of his prescribed work.

PRESCRIBED SUBJECTS FOR LOWER CLASSMEN

English	10 to 12 credits
Foreign Languages	12 credits
Laboratory Sciences	10 to 12 credits
History, Economics, Political and Social Science	12 credits
Mathematics, Philosophy, Psychology	12 credits

The above subjects must be completed before the beginning of the Junior year, except that a Sophomore, with the permission of the Advisory Committee and the approval of the Dean, may postpone the performance of not more than 12 credit hours of prescribed work (one-fifth of the total amount) to the Junior year, but only in so far as the prescribed work conflicts with the continuity of studies leading toward the fulfillment of a Major.

SUBJECTS IN MAJOR GROUPS FOR UPPER CLASSMEN

I. Greek, Latin, English, German, French, Italian, Spanish
II. Physics, Chemistry, Zoology, Botany, Geology, Physiology
III. History, Economics, Political and Social Science
IV. Mathematics, Philosophy, Psychology, Astronomy

At the end of the Sophomore year, or at the beginning of the Junior year, each student shall designate one of the following groups from which he must select his major subject. Thereafter, the head of the department in which that subject lies shall act as his Adviser. For graduation, at least 18 credits must be secured in this major subject; and 12 additional credits must be secured in subjects in the same group or in allied subjects specified by the Adviser.

The requirements stated above are illustrated in detail in the following diagrams:

OUTLINE OF STUDIES IN THE COLLEGE OF LIBERAL ARTS

A. B. Degree

120 Academic Credits + 4 Credits in Physical Education

60 Required — 60 Elective

30 Directed — 30 Free

From any subject of the 4 years with whole or reduced credits.

Subjects in Groups	Credit Hours	When Completed
1. Eng. Lang....	10 to 12	1st and 2nd years, except as 12 credits may be deferred to Junior year by permission.
2. Modern & Classical Lang.	12	
3. Natural Sciences.....	10 to 12	
4. Hist., Econ., Polit. and Soc. Sci...	12	
5. Math., Phil. & Psy.....	12	
Phil., Psy., Pol. and Soc. Sci. not open to Freshmen.....	56 to 60	

Major Groups	When Taken
I. Language and Literature. II. Natural Sciences. III. Hist., Econ., Polit. and Soc. Sci. IV. Math., Phil., Psy., and Astron.	3d and 4th years

Major Subject — Major Distributed Credits

18 credits in one department, with head of department as student's Adviser.

12 credits in same group as Major subject or in allied subjects as specified by Adviser.

Freshman Requirements

Prescribed Subjects	Credit Hours a Week per Sem.	Special Regulations
English.....	3	Every Freshman must take English 1
Foreign Language.....	3	
Science or Mathematics.	5 or 3	If a student elects mathematics in place of science, he must elect also either history or economics
History, Economics, or Mathematics.....	3	
Physical Education.....	1	
Total Prescribed Hours.	15 or 13	Maximum hours allowed per semester, 17

Courses Open to Freshmen

Subjects	Courses, Prescribed and Elective	Credit Hours a Week per Sem.
English	English 1, 5	3
	English 3	2
Foreign Language	Latin 1 (after 4 yrs. high school Latin)	3
	Greek 9 (beginners)	3
	Greek 15 (after 1 or 2 yrs. high school Greek)	3
	Greek 1 (after 3 yrs. high school Greek)	3
	Greek 2, 10 (after 3 yrs. high school Greek)	2
	German 1 (beginners)	3
	German 2, 3, 20 (after 2 yrs. high school Ger.)	3
	German 4 (after 4 yrs. high school Ger.)	3
	German 21 (after 4 yrs. high school Ger.)	2
	French 1 (beginners)	3
	French 2 (after 2 yrs. high school French)	2
	French 11 (after 4 yrs. high school French)	3
	Spanish 6 (beginners)	3
	Spanish 9 (after 2 yrs. high school Spanish)	2
	Spanish 14 (after 4 yrs. high school Spanish)	3
Natural Science	Physics, 26a and 2a, 27b and 22b	5
	Chemistry, 1a and 2a, 3b and 4b	5
	Botany, 5a and 6a, 7b and 8b	5
	Zoology, 1a and 2a, 3b and 4b	5
	Geology 1	5
	Astronomy 1b	2
Mathematics	Mathematics 1	3
History	History 1, 13	3
	History 29	2
Economics	Economics 1, 2	3
Physical Education	Physical Education 1	1

Sophomore Requirements

Completion of the Prescribed Work (including 2 credits in physical education), except in so far as such work may be deferred to the Junior year by special permission, as provided above.

Maximum hours allowed, exclusive of physical education, 18 a week.

Junior Requirements

Completion of such Prescribed Work as may have been deferred from the Sophomore year, and the election and pursuit of Major Work.

Maximum hours allowed, 18 a week.

Senior Requirements

Completion of 124 credits, including the fulfillment of the requirement of 30 credits for a Major.

Maximum hours allowed, 18 a week.

Free Electives

At any time during his four years of residence a student may elect any courses then open to him, provided that such electives do not conflict with the performance either of his Prescribed Work or of his Major Work.

A Senior electing courses designed primarily for Freshmen will receive for the same only half credit.

ADVISORY SYSTEM FOR THE ELECTION OF STUDIES

To the Advisory Committee for the Election of Studies is confided the duty of assisting Freshmen and Sophomores in registering for the subjects best adapted to their aims and abilities and of counselling them in all matters affecting scholarship.

Freshman and Sophomore students are required to conform to the following regulations:

For Freshmen

1. Each Freshman at the first semester registration days will be assigned by the Chairman to a member of the Committee, who will act as his temporary Adviser, and assist him in registering;

2. Within one month from this registration, each Freshman must appear before the Chairman of the Committee and be assigned, after consultation, to some member of the Committee who will act as his permanent Adviser;

3. At the second semester registration day, each Freshman will register with his own Adviser;

4. On or before May 1 of the Freshman year, each student will go to his Adviser and, in consultation with him, choose his studies for the Sophomore year. The schedule of studies must then be taken to the Chairman for approval.

For Sophomores

1. In the Sophomore year, each student on the first semester registration days must go to his own Adviser and register in accordance with the schedule of studies chosen in the manner just outlined. If, in the meantime, any changes have been decided upon, he must consult his Adviser and obtain the approval of the Chairman before registering;

2. At the second semester registration day each Sophomore will register with his own Adviser;

3. On or before May 1, each Sophomore must go to his Adviser and, after consultation with him, and with the representative of any department concerned, he must choose his major course of studies for the Junior year;

4. No Sophomore will be allowed to register for Major Work unless he has fulfilled at least four-fifths of the required work of the Freshman and Sophomore years, and has obtained from the Chairman a certificate to that effect.

Major Advisers

Every student of the Junior and Senior years will register with the head of the department in which he elects his Major, and this person will act through his Junior and Senior years as his Adviser.

SPECIAL ARRANGEMENTS

Credit for Work Done in the College of Law.—A student who has received credit for the work of the first two years in the College of Liberal Arts may, in the third year, elect from four to six hours per semester of the lectures of the first year of the law course, as a substitute for studies in the College of Liberal Arts, and in the following year he may, in the same way, take the remainder of the thirteen hours of the first year's course in the College of Law. Or, if he so desires, he may elect, in his Senior year, the entire thirteen hours of the first year law course (equivalent to twenty-six credit hours in the College of Liberal Arts), provided he has fulfilled all the requirements for obtaining his B. A. degree. Thus a student may obtain both the academic and legal degrees in six years. In either of the above cases, the student will be classified as an irregular student in the College of Liberal Arts, and will be required to pay tuition at the regular rate of three dollars per credit hour per semester.

Six-Year Combined Collegiate and Medical Course.—In this combined course the student takes the first two years of work in the College of Liberal Arts, and the last four in the College of Medicine. At the end of six years he is granted the degrees of B. S. and M. D.

Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary.—Arrangements have been made with the Hebrew Union College and with Lane Theological Seminary, whereby students of these institutions who are pursuing a course in the University of Cincinnati may be allowed to count work in Hebrew taken in these institutions for the degree of Bachelor of Arts, to the amount of two hours a week throughout the Freshman and Sophomore years, and three hours a week throughout the Junior and Senior years, for the Hebrew Union College, and three hours per week for three years in Lane Theological Seminary, provided such work is regularly entered upon the election schedules of the University.

Credit for Work Done in the Art Academy of Cincinnati.—By an arrangement with the Art Academy of Cincinnati, students from the University may elect from the courses stated in the catalogue in

drawing, modeling and carving, not more than six hours' work in any one semester, and receive credit therefor on the books of the University, provided these courses have been duly entered on the election blank and the proper certificate from the Director of the School is presented on their satisfactory completion. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

Credit for Work Done in the College for Teachers.—Certain courses in Education, to the number of twenty-four credits, may be elected by undergraduates during the Senior year and be counted toward fulfilling requirements for the A. B. degree.

COURSES OF INSTRUCTION

ASTRONOMY

JERMAIN GILDERSLEEVE PORTER, PH. D., Director of the Observatory and Professor of Astronomy

For Undergraduates

1b. Descriptive Astronomy.—Lectures and class work. No mathematical training is required beyond a geometrical conception of the sphere and its circles. The object of the course is to give a comprehensive view of astronomy in its historic and practical relations, as well as a general résumé of our knowledge concerning the heavenly bodies. Reference books: *Popular Astronomy,* Newcomb; *Manual of Astronomy,* Young; *The Stars in Song and Legend,* Porter. M., F., 10:30—11:30, *second semester.* Professor Porter.

For Undergraduates and Graduates

3. Spherical and Practical Astronomy.—Text-books: Campbell's *Elements of Practical Astronomy;* Chauvenet's *Spherical and Practical Astronomy.* Once a week throughout the year.
Professor Porter.

4. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Computation of orbits. Text-books: Watson's *Theoretical Astronomy.* Once a week throughout the year. Professor Porter.

Courses 3 and 4 will ordinarily be given at the Observatory. Hours to be arranged.

BIBLICAL LITERATURE

EDWARD MACK, A. M., D. D., . . Lecturer on Biblical Literature.

For Undergraduates and Graduates

8a. The Literature of the Old Testament; with studies in the life and institutions of the ancient Hebrews, particularly in their social aspects. *First semester,* T., Th., 11:30-12:30. Dr. Mack.

8b. The Social Teachings of Jesus and the Apostles.—Their teachings with regard to the nature of man, his individuality and responsibility; the family, rights of children, divorce; society, the method of its improvement; the state and our relations to it; wealth, the rich and the poor, "the social question." *Second semester,* T., Th., 11:30-12:30. Dr. Mack.

Other hours will be arranged if there is sufficient demand.

BIOLOGY

Harris Miller Benedict, Ph. D., ... Professor of Botany.
Harry Lewis Wieman, Ph. D., . Assistant Professor of Zoology.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Cora May Box, A. M., ... Instructor in Zoology.
Vernon Lantis, A. M., ... Instructor in Botany.
Raphael Isaacs, A. M., ... Assistant in Embryology
——— ———, ... Assistant in Zoology.
——— ———, ... Graduate Assistant in Botany.

When a biological science is chosen as the principal subject of a major group for the degree of Bachelor of Arts, the thirty credits regarded as a minimum must be in zoology or in botany.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students who expect to do advanced work in botany or zoology are advised to take general inorganic chemistry during their first year and organic chemistry during their second year, together with the courses in botany or zoology.

Students who desire to be recommended as teachers of botany or zoology in secondary schools must complete as a minimum, Courses 1a to 8b inclusive and Courses 15 and 35. It is very desirable that they also do at least one year of graduate work.

For Undergraduates

1a. Animal Biology.—Lectures dealing with topics of a general biological nature, such as animal activities and adaptations, protoplasm, the cell, sex, development, etc. The course is intended to provide a thorough foundation for further work in zoology. This course must be accompanied by Course 2a. *First semester,* M., W., F., 9:30-10:30. Assistant Professor Wieman.

2a. Animal Biology, Laboratory.—This course consists of the practical laboratory and field work which must accompany Course 1a. Certain animals, selected as types to illustrate general principles, are dissected and compared. Careful notes and drawings of all dissections are required. *First semester.*

Sec. 1, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.

Assistant Professor Wieman and Miss Box.

3b. General Zoology.—Lectures dealing in a comparative way with the various groups of animals, including life-histories, evolution, heredity, and classification. This course must be accompanied by Course 4b. *Second semester,* M., W., F., 9:30-10:30.

Assistant Professor Wieman.

Course 3b is open to students who have passed in Course 1a.

4b. General Zoology, Laboratory.—This course consists of the practical work which must accompany Course 3b. Careful dissections, drawings, and comparisons are required. *Second semester.*

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.

Assistant Professor Wieman and Miss Box.

5a. Plant Biology.—A course of lectures on essential biological principles, the topics being as follows: the physical basis of life, its origin and evolution, sexual reproduction and heredity, plant breeding, storage and release of all living energy by plants, the conditions controlling the growth of wild and cultivated plants, and those involved in bacterial action and control. This course must be taken in conjunction with Course 6a. *First semester,* M., W., F., 8:30-9:30. Professor Benedict.

Courses 5a and 6a together constitute a five-hour course in biological principles, which can be completed in one semester.

6a. Experimental Plant Biology.—Laboratory work on plant material for the purpose of investigating the evidence for the principles advanced in the accompanying Course 5a, which must be taken in conjunction with Course 6a. Accurate records of all work are required.

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00. Mr. Lantis.

7b. General Botany.—Lectures on the structure, reproduction, and adaptation to environment of the plants of the various phyla of the plant kingdom. It must be taken in connection with Course 8b. *Second semester,* M., W., F., 10:30-11:30. Professor Benedict.

8b. General Botany, Laboratory.—Thorough laboratory study of the structure of selected plants as examples of the different phyla of the plant kingdom, as well as carefully organized field trips for the purpose of learning to identify the commoner plants in their own habitats. This course must be taken in connection with Course 7b. T., Th., 1:00-4:00. Professor Benedict and Mr. Lantis.

[9. Sanitary Biology.] Lectures on the biological principles involved in sanitary engineering, designed to enable the engineer to solve local problems in sanitation and to appreciate the significance of specialists' reports. M., 2:00-3:00, throughout the year.

Course 9 is open to all students. Professor Benedict.

Omitted in 1914-15.

12b. Field Ornithology.—A field study of the identification, classification, songs, and habits of our native birds. One laboratory period per week during the second semester. Hours to be arranged. Professor Benedict.

[35. Systematic Botany.] A course designed to give a working knowledge of the flora of this vicinity, comprising field trips followed by laboratory work in classification and in the preservation of plants, discussions on plant relationships and the preparation of "keys." T., Th., 9:30-12:30. Professor Benedict and Mr. Lantis.

Omitted in 1914-15.

Course 35 is open to students who have taken Courses 5 and 7, and under certain conditions to all Seniors. It is required of all who desire to be recommended as teachers of Biology or Nature-Study in secondary schools.

15. Invertebrate Zoology.—An advanced laboratory course dealing with selected forms of Invertebrates. Credit according to number of hours elected. Miss Box.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

For Undergraduates and Graduates

19a. Embryology of Vertebrates.—The work consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 20. T., Th., 1:00-2:00. Assistant Professor Chambers.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

20a. Embryology of Vertebrates, Laboratory.—Laboratory work to accompany Course 19a. The work is based largely on the chick and pig. T., Th., 2:00-5:00.

Assistant Professor Chambers and Mr. Isaacs.

17b. Comparative Anatomy of Vertebrates.—Lectures on the anatomy, classification, habits, and distribution of vertebrates. The

anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester,* T., Th., 1:00-2:00.

Assistant Professor Chambers.

Prerequisite: Courses 19a and 20a.

18b. Comparative Anatomy of Vertebrates, Laboratory.—The work consists in the careful dissection and study of selected forms to accompany Course 17b. *Second semester,* T., Th., 2:00-5:00.

Assistant Professor Chambers.

[13b. Animal Physiology.] Lectures dealing with fundamental physiological phenomena of animal life. This course must be accompanied by Course 14b. *Second semester,* T., Th., 1:00-2:00.

Assistant Professor Chambers.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

Omitted in 1914-15.

[14b. Animal Physiology Laboratory.] Experiments on different organisms selected for the study of physiological activities, such as irritability, conductivity, reproduction, tropisms, etc., to accompany Course 13b. *Second semester,* T., Th., 2:00-5:00.

Assistant Professor Chambers.

Courses 13b and 14b alternate with Courses 17b and 18b. Courses 13b and 14b are omitted in 1914-15.

10a. Microscopical Technique.—The course includes the preparation and use of standard fixing and staining agents, and drill in the manipulative processes incident to general microscopy and cytology. *First semester,* M., W., 1:00-4:00.

Assistant Professor Wieman.

Prerequisite: Courses 19a and 20a.

10b. Cytology.—A laboratory course intended to serve as an introduction to cytology and the general field of cellular biology. *Second semester,* M., W., 1:00-4:00.

Prerequisite: Course 10a. Assistant Professor Wieman.

21. Histology and Organology.—This course belongs to the Department of Anatomy of the Medical College. It is numbered 2 in the catalogue of the Medical College, and is open to academic students who are taking or have taken Courses 19a and 20a. See catalogue of Medical College for full description of this course and others open to academic students. M., W., 8:30-11:30.

Assistant Professor Chambers.

23. Field Work.—Practical directions for collecting, identifying, and preserving specimens will form a minor part of the work. Each

student is assigned a special problem. The work may be taken as a two or a three-hour course. Hours to be arranged.

Professor Benedict.

Prerequisite: Courses 5a, 6a, 7b, and 8b.

24a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 25a. *First semester,* M., 1:00-4:00.

Professor Benedict.

Prerequisite: Courses 5a, 6a, 7b, and 8b.

25a. Plant Histology Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawings and descriptions will be required. A few exercises on the identification of food adulterations will be given. This course must be taken in connection with Course 24a. *First semester,* M., W., 1:00-4:00.

Professor Benedict.

26b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 27b. *Second semester,* M., 1:00-4:00. Professor Benedict.

Prerequisite: Courses 24a and 25a.

27b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 26b. *Second semester,* M., W., 1:00-4:00. Professor Benedict.

Primarily for Graduates

30. Current Problems in Zoology.—Assigned readings and discussions to accompany courses of research. A reading knowledge of French and German is required. Two credit hours.

Assistant Professor Wieman.

40. Current Problems in Botany.—Lectures, assigned readings, and discussions upon present problems in plant physiology and cytology. A reading knowledge of French or German is required. Two credit hours. Professor Benedict.

Prerequisite: Courses 5a, 6a, 7b, 8b, 24a, 25a, 26b, 27b, and 35.

31. Research.—Credit according to number of hours elected.

Professor Benedict, Assistant Professor Wieman,
and Assistant Professor Chambers.

Evening Course

50. Principles of Animal Biology.—A lecture and laboratory course. The lectures deal with general biological topics, such as animal morphology, physiology, adaptation, heredity, and evolution. In the laboratory certain animals selected as types are dissected and compared. Lecture, F., 7:30-9:30; Laboratory, Th., 7:30-9:30.

Assistant Professor Wieman and Mr. Isaacs.

CHEMISTRY

Lauder William Jones, Ph. D., ... Professor of Chemistry.
Harry Shipley Fry, Ph. D., . Associate Professor of Chemistry.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Edward B. Reemelin, A. B., M. D., Assistant Professor of Physiological Chemistry.
James Aston, Ch. E., ... Assistant Professor of Metallurgy.
Clarence A. Nash, A. M., . . Instructor in Physical Chemistry.
Edwin W. Esslinger, A. M., . Instructor in Analytical Chemistry.
Ralph Edward Oesper, A. M., Graduate Assistant in Chemistry.
Leonora Neuffer, A. B., . . . Graduate Assistant in Chemistry.

Student Assistants: Henry Marks, Neil Wright, Clifford Rolle.

For Undergraduates

1a. General Inorganic Chemistry.—The Non-metals. This course gives a definite idea of the fundamental laws of general chemistry, and furnishes a survey of the important facts concerning the chemistry of the non-metals and their compounds. Lectures, recitations, and quizzes illustrated by experiments, charts, and specimens. Course 2a forms an integral part of, and must accompany Course 1a. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

2a. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week. *First semester.* Experiments complementary to the subject-matter of Course 1a.

Sec I, T., Th., 1:00-4:00.
Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

3b. General Inorganic Chemistry.—The Metals. A continuation of Course 1a. The properties of the metals and their compounds. Three hours per week. *Second semester.* Students who have completed Courses 1a and 2a are eligible for this course. It must be accompanied by Course 4b. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

4b. General Inorganic Chemistry Laboratory.—Two laboratory exercises per week. *Second semester.* Experiments complementary to the subject-matter of Course 3b.

Sec. I, T., Th., 1:00-4:00.

Sec. II, M., W., 1:00-4:00.

Associate Professor Fry and Assistants.

5a. Qualitative Analysis.—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis will be laid upon the application of the laws of chemical equilibrium, and the theories of solutions and of electrolytic dissociation to the practical problems of the analyst. Three exercises a week. *First semester.* M., W., F., 8:30-9:30. Mr. Nash.

Prerequisite: Courses 3b and 4b.

6. Qualitative Analysis Laboratory.—To accompany Course 5a. During the first few weeks of the semester the student will perform important tests commonly used in the processes of analytical chemistry. The later work of the course will furnish abundant training in the qualitative examination of salts, minerals, alloys, etc. Two exercises a week, *first semester;* two laboratory periods and one quiz period, *second semester.* T., Th., 1:00-4:00.

Mr. Nash and Mr. Esslinger.

7. Quantitative Analysis.—An introductory laboratory course in gravimetric and volumetric analysis. Occasional conferences are held, at which analytical methods and calculations are discussed, and at which reports are submitted covering assigned reading. Three exercises a week. *First or second semester.* M., W., F., 1:00-4:00.

Prerequisite: Courses 5a and 6 (first semester). Mr. Esslinger.

8b. Elementary Organic Chemistry.—Three exercises a week. *Second semester.* Quizzes and lectures which are experimental, covering the chief classes of organic compounds of both the aliphatic and aromatic series. This course is arranged to meet the needs of those who intend to specialize in chemistry, in medicine, or in biology. It serves as a general introduction for those who intend to go deeper into the study of organic chemistry. M., W., F., 11:30-12:30.

Prerequisite: Courses 3b and 4b. Professor Jones.

9b. Organic Reactions and Preparations.—Laboratory practice to accompany the lectures of Course 8a. *Second semester.* M., W., 1:00-4:00. Professor Jones, assisted by Dr. Reemelin.

Prerequisite: Courses 3b and 4b.

14b. Metallurgy.—Five credit hours per week. *Second semester.* A study of fuels, refractories, ferrous and non-ferrous metallurgy, and practice in metallurgical calculations. Emphasis is laid upon

foundry and steel works processes. Excursions will be made to metallurgical establishments in Cincinnati and vicinity. M., T., W., Th., 9:30-10:30; M., 1:00-4:00. Assistant Professor Aston.

Prerequisite: Courses 5a, 6, and Physics 1.

15b. Assaying.—One afternoon a week. *Second semester.* Laboratory practice in the fire assay of ores and base metals for gold, silver, and lead. Hours to be arranged.

Prerequisite: Course 7b. Assistant Professor Aston.

[16a. Technical Inorganic Chemistry.] Three periods a week. *First semester.* M., W., F., 9:30-10:30.

Assistant Professor Goettsch.

Prerequisite: Courses 5a and 6.

Omitted in 1914-15.

17. Technical Analysis.—The course consists of analyses of typical industrial products, involving the use of gravimetric, volumetric, gasometric, electrolytic, and colorimetric processes. T., Th., F., 1:00-4:00. May be taken either semester, or both semesters. Two or three credit hours.

Assistant Professor Goettsch, assisted by Mr. Esslinger.

Prerequisite: Course 7b.

18b. Technical Organic Chemistry.—M., W., F., 8:30-9:30.

Assistant Professor Goettsch.

Prerequisite: Courses 8a, 9a, and 16a.

[29a. Practical Photography.] One lecture and one laboratory period a week. *First semester.* The course embraces a study of the exposure and development of photographic plates; the treatment of defective negatives; the preparation and use of various printing papers; copying, enlarging, and lantern-slide making. W., 8:30-9:30; F., 1:00-4:00. Assistant Professor Goettsch.

Prerequisites: 1a, 2a, 3b, and 4b.

Omitted in 1914-15.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. Special topics and recent theories of inorganic chemistry, including colloids, reactions in non-aqueous solvents; inactive gases; radioactive elements and emanations; the electron; valence, structure, and co-ordination theories. T., Th., 8:30-9:30. Associate Professor Fry.

Prerequisite: Courses 5a, 6, and 7b.

11a. Inorganic Preparations.—Three laboratory exercises a week. *First semester.* Experiments supplementary to the subject-matter of Course 10a. Hours to be arranged.

Prerequisite: Course 7b. Associate Professor Fry.

12a. Physical Chemistry.—Lectures and recitations. Three exercises a week. *First semester.* An introductory course which considers the general properties of gases, liquids, solids and solutions, as well as the principles determining reaction velocity and the equilibria in homogeneous and heterogeneous systems. M., W., F., 11:30-12:30. Mr. Nash.

Prerequisite: Chemistry 5a, 6a, and 7b, Physics 26a and 27b, Mathematics 5.

13b. Physical Chemistry Laboratory.—Two exercises a week. *First semester.* Designed to illustrate the principles developed in Course 12a, and to provide a knowledge of the common methods used in physical-chemical measurements. This course must accompany Course 12a. Th., F., 1:00-4:00. Mr. Nash.

32b. Electrochemistry.—Lectures and recitations. Three exercises a week. *Second semester.* A general consideration of the electrical properties of matter with special reference to the theory of aqueous solutions. T., Th., S., 11:30-12:30. Mr. Nash.

Prerequisite: 12a.

33b. Electrochemistry Laboratory.—Two exercises a week. *Second semester.* Determination of conductivity with its application, transference numbers, electromotive force, dielectric constant, etc. Th., F., 1:00-4:00. This course accompanies Course 32b.

Mr. Nash.

[34a. Thermodynamics Applied to Chemistry.] Two exercises a week. *First semester.* Devoted to an elementary consideration of the principles of thermodynamics and their application to physical-chemical problems. The work will be illustrated by the solution of many numerical examples. Hours to be arranged. Mr. Nash.

Prerequisite: Courses 12a and 32b.

Omitted in 1914-15.

41a. Phase Rule.—Lectures and recitations. A study of the phase rule and its applications. Two exercises a week. *First semester.* Hours to be arranged. Mr. Nash.

Prerequisite: Course 12a.

20. Advanced Organic Chemistry.—Three lectures and conferences a week, embracing a systematic study of the principles and practices of organic chemistry, and treating of the modes of forma-

tion, properties, reactions, and constitutional formulae of typical members of the most important classes of organic compounds. Hours to be arranged. Professor Jones.

Prerequisite: Courses 5a, 6, 7, 8b, 9b, and a reading knowledge of German and French.

21. Advanced Organic Chemistry Laboratory.—Practice in the preparation of a number of typical organic compounds. This course will require considerable reading in the journals of chemistry and in various hand-books and works of reference. Credit according to number of hours elected. May be taken either first or second semester, or both semesters. Professor Jones.

Prerequisite: As in Course 20a.

22a. Bio-Chemistry.—Among other subjects, the course will take up for discussion the nature of carbohydrates, fats, and protein substances; the processes of digestion and metabolism; the chemical composition of the body tissues, secretions, and excretions, including the methods employed in their analysis. *First semester,* M., W., F., 11:30-12:30. Assistant Professor Reemelin.

Prerequisite: Courses 8b and 9b.

22a. Bio-Chemistry Laboratory.—Laboratory exercises arranged to accompany the lectures. Reactions of carbohydrates, fats, and protein substances applied to the qualitative detection of, and the quantitative estimation of, these substances in body tissues, secretions, and excretions. Digestion, the analysis of gastric and fecal matter and of urine will be considered from the chemical point of view. *First semester,* M., W., 8:30-11:30; F., 1:00-4:00.

Assistant Professor Reemelin.

Prerequisite: Courses 8a and 9a.

24b. History of Chemistry.—Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. Three exercises per week. *Second semester.* Hours to be arranged.

Associate Professor Fry.

Prerequisite: Courses 5a, 6, 8b and 9b, or 20b and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two laboratory periods a week. *Second semester;* hours to be arranged.

Professor Jones.

Prerequisite: Courses 5a, 6, 8b, and 9b; Physics, 1 year.

Primarily for Graduates

30. Research.—This course requires intensive laboratory work under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d).

Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch, Assistant Professor Aston.

During the summer of 1914, students engaged in research may enroll in the Graduate School.

35a. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration will be chosen each year from the following: Optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; tautomerism; the electronic conception of valence; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpenes; the polypeptides, proteins; the organic dyes, etc. *First semester.* Two hours a week, to be arranged. Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Commerce.

James Dysart Magee, Ph. D., ... Instructor in Economics.

Students desiring a general knowledge of economics are recommended to take Course 1 or Courses 1 and 2.

For Undergraduates

1. Economics.—This course is intended to give the student a general view of the subject. It includes a study of (1) the elements of economics: wealth, value, price, competition, monopolization, production, and distribution; (2) the evolution of indus-

try from local organization and control during the middle ages, through nationalism and the industrial revolution, to modern conditions; and (3) the leading economic problems of today. M., W., F., 11:30-12:30. Professor Hicks.

2. Economic History.—A study of industrial development since the tenth century, including the economic history of the United States. Subjects considered: the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times. T., Th., S., 11:30-12:30.

Dr. Magee.

For Undergraduates and Graduates

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist mainly of a comparison of the views of representative economists. Th., 1:00-3:00. Professor Hicks.

Course 11 is open to students who have completed Course 1.

15a. Railroads.—This course includes a study of the place of transportation in economic development; a brief description of the early technical development of the railroad; a history of the railroad development in the United States; and a discussion of the problem of governmental regulation of railroads. T., Th., 9:30-10:30. Dr. Magee.

Prerequisite: Course 1.

15b. Tariffs.—The course begins with a study of the theory of international trade. It considers in some detail the tariff history of the United States, including the actual course of the duties and the arguments urged at the various times in favor of the different policies. Also the present tariff situation in England, France, and Germany is treated. T., Th., 9:30-10:30. Dr. Magee.

Prerequisite: Course 1.

[16a. Money and Banking.] The elementary principles of money and banking are considered, together with the monetary history of the United States. In the discussion of banking, the history of the United States is treated in some detail. In the case of Germany, France, and England, the history is outlined briefly and the present situation discussed more fully. T., Th., 9:30-10:30.

Prerequisite: Course 1. Dr. Magee.

Omitted in 1914-15.

[16b. Labor.] The subjects treated in this course include: the development of the Trade Union; the form of organization and federation; the aim and policies of Trade Unions; the legal aspects

of Unionism; governmental regulation of working conditions; employers' association; and methods of industrial peace. T., Th., 9:30-10:30. Dr. Magee.

Prerequisite: Course 1.

Omitted in 1914-15.

Evening Courses

32. Economics (Similar to Course 1).—W., 7:30-9:30. Professor Hicks.

33. Economic History (Similar to Course 2).—Th., 7:30-9:30. Dr. Magee.

30. Commercial Geography.—A study of the leading articles of commerce, including both raw materials and manufactured products, their character and relative importance, the principal sources of supply, and their distribution in the world's markets. W., 4:45-6:45. Dr. Magee.

31. Statistics.—The principles of the statistical method and their application to social and economic problems. M., 4:45-6:45. Dr. Magee.

* EDUCATION

William Paxton Burris, A. M., L. H. D., Professor of the History and Principles of Education.

John William Hall, A. M., Professor of Elementary Education.

Henry Skinner West, Ph. D., Professor of Secondary Education.

Cyrus De Witt Mead, A. M., Assistant Professor of Elementary Education.

Abbie Louise Day, B. S., B. Di., Instructor in Elementary Education.

The following courses may be elected by undergraduates during the Senior year, and be counted toward fulfilling requirements for the A. B. degree in the McMicken College of Liberal Arts.

1. History and Principles of Education.—6 credits. M., W., F., 10:30-11:30. Professor Burris.

2. Theory and Practice of Teaching.—8 credits. Three hours class-room work and fifteen hours of practice per semester. Hours for practice to be arranged before registration. M., W., F., 9:30-10:30. Professor Hall.

** After 1914-15, those students who wish both an A. B. degree and a Teacher's Diploma, must earn the latter by not less than a year's resident work in the College for Teachers after completing the requirements for the A. B. degree. Those who wish to qualify in four years for teaching in elementary schools, will spend the first two years in the College of Liberal Arts, and the last two years in the College for Teachers, receiving, at the end of the four year period, the degree of Bachelor of Science, conferred upon the recommendation of the Faculty of the College for Teachers.*

For further information, including statements in detail concerning the requirements of professional programs for those who wish to prepare for various positions in educational work, see announcement of the College for Teachers.

4. School Economy.—2 credits. F., 11:30-12:30. Miss Day.

14. The Teaching of English.—4 credits. M., W., 8:30-9:30. Miss Day.

16. The Teaching of History.—2 credits. F., 8:30-9:30. Assistant Professor Mead.

20. The Teaching of Mathematics.—2 credits. *Second semester,* M., W., 11:30-12:30. Assistant Professor Mead.

22. The Teaching of Geography.—2 credits. *First semester.* M., W., 11:30-12:30. Assistant Professor Mead.

Prerequisite Courses:

Psychology 1a and 1b.

Philosophy 5a.

Geology and Geography 1.

History 15. (For those who did not offer a year's work in American history for admission.)

Education Courses 1, 2 and 4, and eight credits for work elected in Courses 14, 16, 20, and 22, making a total of twenty-four credits, entitle the graduate to a Teacher's Diploma, conferred by the College for Teachers, and a place on the preferred list of those eligible to appointment in the Cincinnati schools.

Students may count Education as one of the two departments in each of which they are required to obtain at least sixteen credits for graduation.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature*)

Frank Wadleigh Chandler, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
Emilie Watts McVea, A. M., Assistant Professor of English.
Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and of English.
Clyde William Park, A. M., . . Assistant Professor of English.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clarence Dimick Stevens, A. M., Assistant Professor of English.

All students in English, before making their election of courses, are advised to consult with some member of the department, and to

* During the months of January, February, and March, 1915, Professor Anatole LeBraz, of the University of Rennes, will lecture in French at the University under the auspices of the Ropes Foundation, his subject being "The Celtic Influence in Literature."

read carefully the departmental bulletin of information as to the proper sequence in which such courses should be taken.

No student should enter or withdraw from a two-semester course at the beginning of the second semester without first consulting both the instructor concerned and the head of the department.

Students majoring in English are required to take as part of their course either 7 or 10.

For Undergraduates

1. English Composition.—This course presents a general survey of the principles of English composition and endeavors to enforce them by practice in writing. A certain amount of reading in English literature is also required.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, T., Th., S., 8:30-9:30.
Sec. III, M., W., F., 10:30-11:30.
Sec. IV, M., W., F., 10:30-11:30.
Sec. V, M., W., F., 1:00-2:00.
Sec. VI, M., W., F., 1:00-2:00.

Assistant Professors McVea, Van Wye, Park, Young, and Stevens.

Course 1 is required for all students in the College of Liberal Arts in the Freshman year.

A passing grade received in this course may at any time lapse into a "condition," upon recommendation of the Department of English, or upon the joint recommendation of the English Department and any other department of the College of Liberal Arts. A condition thus incurred may be removed only at the examination period next ensuing, and if not removed within one semester, it will lapse into a failure. The method of removing the condition will be determined by the English Department according to the individual case; but, in any event, it must include a written test.

2a. Argumentation.—*First semester,* T., Th., 8:30-9:30.
Assistant Professor Van Wye.

2b. The Forms of Public Address.—*Second semester,* T., Th., 8:30-9:30. Assistant Professor Van Wye.

Courses 2a and 2b are intended to serve as preparation for debating and effective public speaking. They are recommended for Sophomores and for those who may become candidates for the Jones prizes.

25. Public Speaking.—Control of the voice and body, correct enunciation, and practice in effective expression.

Sec. I, T., Th., 10:30-11:30.

Sec. II, T., Th., 11:30-12:30.

Assistant Professor Van Wye.

Course 25 counts as only one University credit for each semester. It is recommended for students who expect to take Course 13.

13a. Debating.—*First semester.* T., 1:00-3:00.

Assistant Professor Van Wye.

Course 13 is open to students who have passed creditably in Courses 1 and 2a. Students interested in public speaking are advised to take Courses 2a and 2b one year, and Course 13 the next.

15b. Descriptive and Narrative Writing.—T., Th., 11:30-12:30.

Assistant Professor McVea.

Course 15b is open to Sophomores and Juniors. Seniors will receive but half credit for it.

3. Types of Literature.—An appreciative rather than an historical study of the principal literary kinds—lyric, narrative verse, drama, prose fiction, and essay—illustrated by readings in representative masterpieces, chiefly English. Lectures, class papers, discussions. T., Th., 9:30-10:30. Professor Chandler.

Course 3 is recommended for Freshmen and Sophomores only. Juniors and Seniors will receive but half credit for it.

5. Shakespeare.—A study of the life and times of Shakespeare, his dramatic methods, and the literary history of his plays. Some of the plays are examined in detail, and most of the others are assigned for reading. M., W., F., 9:30-10:30.

Assistant Professor Young.

Course 5 is open to Freshmen and Sophomores.

11. The English Novel.—A course which considers the origin and history of the English novel, and discusses its characteristics as a form of prose literature. M., W., F., 9:30-10:30.

Assistant Professor Stevens.

Course 11 is recommended for Sophomores and Juniors.

16. Wordsworth and His Contemporaries.—A study of the English romantic poets of the early nineteenth century—Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats—involving a discussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.

Assistant Professor McVea.

Course 16 is recommended for Juniors and Seniors.

4. Nineteenth Century Prose.—Studies in the thought and style of the great prose writers, other than novelists, from Coleridge to Carlyle (during the first semester), and from Emerson to Pater (during the second semester). M., W., F., 10:30-11:30.

Assistant Professor Young.

Course 4 is recommended for Juniors and Seniors.

For Upper-Classmen and Graduates

24. Recent European Drama.—A study of the new dramatic literature, its varieties, technic, aims, and problems, beginning with the later plays of Ibsen, and considering the art and thought of such other representative writers for the stage as Björnson, Hauptmann, Sudermann, Schnitzler, Maeterlinck, Hervieu, Rostand, D'Annunzio, Echegaray, Strindberg, Tchekhov, Pinero, Jones, Phillips, Synge, and Shaw. T., Th., 1:00-2:00. Professor Chandler.

26. The Essay.—A consideration of the origin and history of the English essay, involving a study of the rise of periodical literature and some reading of foreign examples of the type. M., W., 2:00-3:00. Assistant Professor Park.

14. The English Drama from its Origins to 1642.—A survey of the English drama from its beginnings in the Middle Ages to the closing of the theaters. In 1914-15, the major part of the course will be devoted to an intensive study of the rise and development of English comedy. T., Th., S., 10:30-11:30.

Assistant Professor Stevens.

10. Chaucer.—The work and influence of Chaucer: his times, sources, contemporaries, and immediate successors, studied chiefly from the literary point of view. T., Th., S., 9:30-10:30.

Assistant Professor Stevens.

19. Main-Currents in Literary Criticism.—A survey of the principal theories of literature,—Greek, Roman, Italian, French, German, and English. The later portion of the course will be devoted to a study of special problems in literary criticism. W., 4:00-6:00. Professor Chandler.

For Graduates Only

20. Seminary.—Elizabethan Literature in its Continental Relations.—Studies in English literature of the Renaissance, with especial reference to its foreign sources. Such forms as the lyric and the romantic epic; tragedy, comedy, and the history play; pastoral, picaresque, and Utopian fiction; the essay, voyages, and the books of court etiquette will be examined in the light of their European development. T., 4:00-6:00. Professor Chandler.

For Teachers

For courses available for teachers see Courses 19 and 20, the evening courses, and Course 29 described below:

29. Materials and Methods in Secondary English.—The organization and adaptation of the work in composition and literature to meet the needs of pupils in the secondary schools. A course designed for (1) seniors and graduates intending to teach English in secondary schools, (2) teachers in elementary schools preparing to teach secondary English, and (3) teachers in secondary schools already engaged in the teaching of English. S., 9:30-11:30.

Assistant Professor Young.

Courses Regularly Given, But Omitted During 1914-15

12. Literary Composition.—T., Th., 11:30-12:30.
Assistant Professor McVea.

6. Victorian Poetry.—M., W., F., 8:30-9:30.
Professor Chandler.

18. American Literature.—T., Th., 1:00-2:00.
Assistant Professor McVea.

21. English Poetry from Spenser to Burns.—T., Th., 9:30-10:30.
Assistant Professor Stevens.

27. English Drama Since the Restoration.—M., W., F., 1:00-2:00.
Assistant Professor Park.

7. Old English.—T., Th., S., 8:30-9:30.
Assistant Professor Young.

22. Foreign Backgrounds of English Literature.—T., Th., 2:00-3:00. Professor Chandler.

23. The Literary Movement of the Eighteenth Century.—W., 4:00-6:00. Professor Chandler.

Evening Courses

30. English Composition.
Sec. I, Th., 7:30-9:30. Assistant Professor Park.
Sec. II, T., 4:45-6:45. Assistant Professor Stevens.

[31. Nineteenth Century Prose.]
Omitted in 1914-15. Assistant Professor Young.

32. Nineteenth Century Poetry. M., 7:30-9:30.
Assistant Professor Young.

33. Public Speaking. T., 7:30-9:30.
Assistant Professor Van Wye.

GEOLOGY AND GEOGRAPHY

NEVIN M. FENNEMAN, PH. D., Professor of Geology and Geography.
J. ERNEST CARMAN, B. S., M. Di., Assistant Professor of Geology.
WALTER H. BUCHER, Ph. D., ... Instructor in Geology.

For Undergraduates

1. Introduction to the Earth Sciences.—Minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean; followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, M., W., 2:00-5:00; T., Th., 9:30-12:30; T., Th., 2:00-5:00; T., Th., 1:00-4:00. Professor Fenneman, Dr. Bucher, and Assistant.

2. General Geology.—This course is primarily for co-operative engineering students, but Liberal Arts students will also be admitted. An introductory study of minerals and rocks, dynamic geology and topography, followed in the second semester by stratigraphic, structural, and economic geology. M., T., 9:30-10:30; W., 9:30-11:30.
Assistant Professor Carman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure; special attention given to the economic deposits of each period. Frequent local (half-day) excursions noting fossils, stratigraphy, physiography, and economic relations. Lectures, T., Th., 8:30-9:30; Laboratory, M., 1:00-4:00. Course 1 is prerequisite.
Assistant Professor Carman.

Geology 9 is accepted as graduate work by agreement with the professor in charge.

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit according to number of hours elected. Course 1 is prerequisite.
Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Two lectures and one laboratory. Hours to be arranged.
Dr. Bucher.

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* Course 1 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major, unless Course 1 or its equivalent has been taken.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized. Three hours, to be announced. Assistant Professor Carman.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Two or three hours, to be announced.

Course 7 is prerequisite. ————.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to number of hours elected.

14. Course 14 is outlined under the heading "For Teachers." Open to college students only by special agreement with the professor in charge.

16. Course 16 is outlined under the heading "For Teachers."

For Teachers

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lecture, S., 8:30-10:30. Field or Laboratory, 10:30-12:30. Professor Fenneman.

16. Advanced Physiography of the United States.—Course 1 (or Course 14) and Course 9 are prerequisite. Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

19. Historical Geology.—For teachers who have had Course 14. Lectures, S., 8:30-10:30; Field or Laboratory, 10:30-12:30. Assistant Professor Carman.

Evening Course

18. Elementary Geology.—Equivalent to the first half of Course 1, but treating certain subjects more fully. Lecture, T., 7:30-9:30; laboratory, Th., 7:30-9:30. Assistant Professor Carman.

GERMAN

MAX POLL, PH. D., . . . Professor of the Germanic Languages.
CLAUDE M. LOTSPEICH, PH. D., . Associate Professor of German.
ELEANOR NIPPERT, A. B., ... Instructor in German.
MARTIN LUDWICH, M. E., ... Instructor in German.

ASSISTANT: Emma Andriessen, A. M.

For Undergraduates

1. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 11:30-12:30.
Sec. III, M., W., F., 1:00-2:00.
Associate Professor Lotspeich and Miss Nippert.

Course 1 is open to students who have had no German in the high school.

2. German Prose and Poetry.—Reading at sight, grammar, composition, and dictation.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, M., W., F., 10:30-11:30.
Sec. III, M., W., F., 11:30-12:30.
Associate Professor Lotspeich and Miss Nippert.

Course 2 is open to students who have passed in Course 1 or who have had two years of German in the high school.

Course 2 does not count towards a major in German.

20. German Scientific Prose.—Subjects in natural science. T., Th., 11:30-12:30. Associate Professor Lotspeich.

Course 20 is open to students who have passed in Course 1 or its equivalent. Course 20 does not count towards a major in German. If taken after Course 2, Course 20 will count only as a half course.

3. German Composition (Beginners' Course).—German grammar, conversation, and practice in writing German. T., Th., 10:30-11:30. Miss Nippert.

Course 3 is open to students who have passed in Course 1. Courses 2 and 3 may be advantageously taken together.

**4. Introduction to German Literature of the Eighteenth Century.—Lessing's *Emilia Galotti*, Schiller's *Jungfrau von Orleans* and *Maria Stuart*, Goethe's *Iphigenie, Egmont, Tasso* and *Goetz von Berlichingen*. Translation and reading at sight. Practice in

** Students entering the University who have done advanced work in German may anticipate this course by passing an examination on the work as outlined above, within three weeks after matriculation.

writing German, based on the reading. This course is conducted mainly in German.

Sec. I, M., W., F., 10:30-11:30.

Sec. II, M., W., F., 9:30-10:30.

Professor Poll, Miss Nippert, and Assistant.

Course 4 is open to students who have passed in Course 2. Students in this course are urged to take a composition course in addition.

21. German Composition (Intermediate Course).—Practice in composition, conversation and in writing German. T., Th., 9:30-10:30. Course 21 is open to students who have passed in Course 2.

Miss Nippert.

Courses 4 and 21 may be advantageously taken together.

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1914-15: *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll and Assistant.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00.

Professor Poll.

Course 6 is open to students who have passed in Course 5.

[10. German Composition (Advanced Course).] Advanced composition and practice in writing German. S., 9:30-11:30.

Omitted in 1914-15. Professor Poll.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 10:30-12:30.

Professor Poll.

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—Collateral reading and written reports. T., 4:00-6:00.

Professor Poll.

Course 12 is open to students who have passed in Course 5.

[11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.] Lectures in German and collateral reading. *Second semester,* T., 4:00-6:00. Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.

Omitted in 1914-15.

7. Middle High German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. W., 4:00-6:00.

Associate Professor Lotspeich.

8. Old High German.—Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as text-books. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00.

Associate Professor Lotspeich.

[13. Gothic.] Braune's *Gotische Grammatik;* reading of selections from Ulfilas, lectures on Germanic philology. W., 4:00-6:00.

Omitted in 1914-15. Associate Professor Lotspeich.

[26. Old Norse.] Hensler's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. M., 4:00-6:00.

Omitted in 1914-15. Associate Professor Lotspeich.

[9b. German Seminary.] Willem's *Van den vos Reinaerde. Second semester.* T., 4:00-6:00. Professor Poll.

Omitted in 1914-15.

For Teachers

Courses 10 and 30, outlined above, are intended primarily for teachers.

Evening Courses

33. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German. W., 7:30-9:30. Mr. Ludwich.

34. Intermediate German, Prose and Poetry.—Translation, sight reading, grammar, composition, dictation. T., 7:30-9:30.

Associate Professor Lotspeich.

35. Introduction to German Literature of the Eighteenth Century.—Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted in German. W., 7:30-9:30. Professor Poll.

GREEK

JOSEPH EDWARD HARRY, PH. D., ... Professor of Greek.
ARTHUR JAMES KINSELLA, A. M., ... Instructor in Greek.

For Undergraduates

1. Oratory—Epic Poetry—Philosophy.—Lysias, six orations; Herodotus, one book; *Iliad,* Books XIX-XXII.

The Lyric Poets.—Selections. Plato: *Protagoras; Lysis; Laches; Charmides.* Collateral reading: two orations of Lysias; two books of the *Iliad;* Plato's *Apology* and *Crito.* M., W., F., 9:30-10:30, throughout the year. Professor Harry.

A collateral course is offered by Mr. Kinsella for those students who are unable to attend at this hour.

Course 1 is open to students who have had three years of Greek in the high school.

2. Greek Prose Composition.—M., 10:30-11:30, throughout the year. Mr. Kinsella.

Course 2 should be taken in connection with Course 1.

Course 2 is open to students who have had three years of Greek in the high school.

3. The Drama.—Euripides, *Hippolytus;* Sophocles, *Oedipus Tyrannus;* Aeschylus, *Prometheus;* Aristophanes, *Nubes.* Collateral reading—Euripides: *Alcestis, Ion.* M., W., F., 10:30-11:30, throughout the year. Professor Harry.

Course 3 is open to students who have completed Course 1.

4. The Odyssey.—Two hours weekly; to be arranged. Mr. Kinsella.

8. The Life and the Literature of the Ancient Greeks.—Greek Life, *first semester.* Drama, History, Oratory, Plato (1915); Homer (1916); *second semester.* Th., 10:30-11:30. Professor Harry.

Students who are not acquainted with the Greek language may be admitted to Course 8.

9. Elementary Greek.—First Greek book and grammar. Xenophon. M., W., F., 8:30-9:30. (See also Course 17.) Mr. Kinsella.

Course 9 is open to students who have had no Greek in the high school.

[10. The New Testament.] A course in grammar and translation. Two hours; to be arranged with the instructor. Throughout the year. Mr. Kinsella.

Course 10 alternates with Course 16.

Course 10 is open to students who have had three years of Greek in the high school.

Omitted in 1914-15.

11. Advanced Course in the Greek Drama.—*Iphigenia, Antigone, Agamemnon, Aves, Ranae.* M., W., F., 10:30-11:30.
Professor Harry.

12. Xenophon's *Hellenica, first semester. Symposium, Memorabilia, second semester.* T., Th., 10:30-11:30. Mr. Kinsella.

15. Intermediate Greek.—Prose Composition. Homer, I-III. M., W., F., 11:30-12:30. Mr. Kinsella.

Prerequisite: Course 9 or two years of Greek in the high school.

16. Hellenistic Greek.—Philo and other writers of this period. Two hours throughout the year; to be arranged with the instructor. Course 16 alternates with Course 10. Mr. Kinsella.

17. First Year Greek.—T., Th., S., 11:30-12:30. This course is offered to give those who cannot take Course 9 an opportunity to begin the study of Greek in the University. Professor Harry.

[18. Advanced Course in Greek Drama.] *Bacchae, Ajax, Vespae, Pax.* T., 2:00-4:00; Th., 2:00-3:00. Mr. Kinsella.
Course 18 alternates with Course 11.
Omitted in 1914-15.

20b. Greek Mythology.—A lecture course with collateral reading. T., Th., 9:30-10:30. Mr. Kinsella.
Students who are not acquainted with the Greek language may be admitted to Course 20b.

For Undergraduates and Graduates

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Pre-Hellenic archaeology, Greek architecture, and sculpture (1914-15); vase paintings, coins, gem engraving, wall paintings (1915-16). T., 10:30-11:30.
This class is limited to forty students. Professor Harry.

Primarily for Graduates

5. Rapid Reading.—W., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 3:00-5:00.
Professor Harry.

7. Greek Seminary.—The Historians (1914-15); The Attic Orators (1915-16). M., 3:00-5:00. Professor Harry.
Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY

MERRICK WHITCOMB, PH. D., ... Professor of History.
ISAAC JOSLIN COX, PH. D., . . . Associate Professor of History.
——— ———, ... Instructor in English History.

ASSISTANT: ————.

For Undergraduates

1. Middle Ages—Renaissance.—This course includes the main facts of European history from the fall of the Roman Empire to the beginning of the Lutheran Reformation. Lectures and recitations. M., W., F., 9:30-10:30. Professor Whitcomb.

3. The Revolution and Napoleon.—Beginning with the Bourbon period this course includes a study of the Ancien Régime and the French Revolution, and follows the fortunes of Napoleon to 1815. Lectures and recitations. M., W., F., 10:30-11:30.

Professor Whitcomb.

13. General Course in English History.—This course, while open to all students, is especially recommended for those who desire a general introductory course as preparatory to the study of both European and American history. The course traces the development of the English people from the earliest times to the present. The method is by lecture, text-book, and source-book. M., W., F., 1:00-2:00. ——— ———.

29. Ancient History to 476, A. D.—This course comprises a brief survey of the development of the principal Oriental nations; the political and the social life of the Greeks; the early political life and expansion of the Roman people, and their social and economic development under the Empire. T., Th., 8:30-9:30.

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15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. In most cases, it should not be taken before the Sophomore year, and should be preceded by History 1 or History 13. The work covers the period from the earliest discoveries to the present time and is based largely upon a text-book, supplemented by regular reports and lectures. Special quiz sections and conference groups at other hours, if necessary. M., W., F., 8:30-9:30. Associate Professor Cox.

For Undergraduates and Graduates

25. European History Since 1814.—An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question; Colonization T., Th., 10:30-11:30.
Professor Whitcomb.

Open to Seniors; to Juniors by permission.

[46. History of Germany.] Beginning with the early Germans this course will follow the history of the German peoples down to the present time. The relations of the Germans to the Roman Empire; conquests of Charles the Great; the Medieval Empire; the Reformation; rise of the Hohenzollern dynasty; period of Frederick the Great; Napoleon; Wars of Liberation; organization of the German Empire. T., Th., 10:30-11:30. Professor Whitcomb.

Omitted in 1914-15.

[20. Spain and Spanish America.] A brief view of the development of the Spanish nation, tracing typical institutions that later affected the Spanish colonies; the discovery of America and the development of the Spanish colonial system; the struggle for Spanish American independence; the subsequent development of selected countries in Latin America, their relations with Europe and the United States; Pan-American movements of the present day. Lectures and special reports. Open to advanced students. Th., 9:30-11:30. Associate Professor Cox.

Omitted in 1914-15.

[21. American Constitutional History.] The course treats of the development of governmental institutions during the Colonial era, and of the important constitutional questions occurring between the Revolution and the Civil War. M., W., F., 11:30-12:30.
Associate Professor Cox.

Open to those who have had Course 15 or an equivalent.

Omitted in 1914-15.

22. American Constitutional History (Continued).—A review of the leading governmental problems connected with the Civil War and Reconstruction Periods, and the subsequent industrial and territorial expansion of the United States. Lectures and special reports. M., W., F., 11:30-12:30. Associate Professor Cox.

28. American Territorial History.—A general view of the territorial development of North America with the United States as its chief factor. Emphasis will be given to Spanish-American relations between 1803 and 1823. Lectures and special reports. Th., 9:30-11:30. Associate Professor Cox.

36. Method in History.—A course for secondary teachers and those preparing for positions in the high school. S., 9:30-10:30.
Professor Whitcomb,
Associate Professor Cox, and ————.

39. Seminary in American History.—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. S., 10:30-12:30.
Associate Professor Cox.

Open to properly qualified teachers.

40. English Constitutional History.—The course traces the development of English political institutions from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American history. T., Th., 11:30-12:30. ————.

Evening Courses

48. General Course in English History.—This course, while open to all students, is especially recommended for those who desire a general introductory course as preparatory to the study of both European and American history. The course traces the development of the English people from the earliest times to the present. The method is by lecture, text-book, and source-book. W., 7:30-9:30.
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47. General Course in American History.—The work of this course covers the Colonial and Revolutionary Periods and is based largely upon a text-book, supplemented by regular reports and lectures. Th., 7:30-9:30. Associate Professor Cox.

[49. General Course in American History (Continued).] The work of this course covers the period from 1789 to the present time, and is conducted in the same manner as Course 47. Th., 7:30-9:30. Associate Professor Cox.

Omitted in 1914-15.

[55. English Constitutional History.] The course traces the development of the English constitution from the Saxon period to the present times. Recommended for students who intend to enter upon the study of law, and for those who wish to specialize in American History. W., 7:30-9:30. ————.

Omitted in 1914-15.

LATIN

JOHN MILLER BURNAM, PH. D., ... Professor of Latin.
WILLIAM TUNSTALL SEMPLE, PH. D., Assistant Professor of Latin.

For Undergraduates

1. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Informal discussion of the life and thought of the times.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 10:30-11:30.
Sec. III, M., W., F., 10:30-11:30.
Professor Burnam and Assistant Professor Semple.

Course 1 is open to students who have had four years of Latin in the high school.

2. Cicero, Tacitus, Horace.—Cicero's *Laelius,* Tacitus' *Agricola* and *Germania,* selections from Horace's Satires and Epistles.

Sec. I, T., Th., S., 9:30-10:30.
Sec. II, M., W., F., 9:30-10:30.
Professor Burnam and Assistant Professor Semple.

Course 2 is open to students who have completed Course 1.

6. Prose Composition.—One hour per week throughout the year. T., 10:30-11:30. Assistant Professor Semple.

Course 6 is required of all students who choose Latin as a major. It may be taken any year after the completion of Course I.

3. Comedy.—Plautus and Terence, *first semester;* Lucretius' *De Rerum Natura, second semester.* M., W., F., 11:30-12:30.
Assistant Professor Semple.

Course 3 is open to students who have passed in Courses 1 and 2.

4. Tacitus and Gaius.—Three hours, to be arranged.
Professor Burnam.

Course 4 is introductory to a study of Roman institutions, history, and law.

Course 4 is open to students who have passed in Courses 1 and 2.

5. Latin Literature.—A general survey of the life and letters of the Roman people from the earliest times until the later Empire. W., 2:00-3:00. Assistant Professor Semple.

Primarily for Graduates

Hours in all cases to be arranged

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fif-

teenth century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a. Virgil. Three hours.
10b. Caesar. Omitted in 1914-15.
10c. Cicero. Omitted in 1914-15.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1914-15 (Course 10a) is Virgil. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

Evening Course

13. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Informal discussions of the spirit and life of the times. M., 7:30-9:30. Assistant Professor Semple.

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*MATHEMATICS

Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
Stephen Elmer Slocum, Ph. D., Professor of Applied Mathematics.
Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.
Louis Brand, A. M., . . . Assistant Professor of Mathematics.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Joseph Henry Kindle, A. M., . . . Instructor in Mathematics.
Edward Smith, M. S., ... Instructor in Mathematics.

For Undergraduates

1. Algebra, Trigonometry.—Selected portions of Algebra and the elementary Theory of Equations. Rietz and Crathorne, *College Algebra;* Trigonometry, Crockett, *Trigonometry.*

Sec. I, M., W., F., 8:30-9:30.	Miss Lawler.
Sec. II, T., Th., S., 8:30-9:30.	Miss Lawler.
Sec. III, M., W., F., 9:30-10:30.	Miss Lawler.
Sec. IV, T., Th., S., 9:30-10:30.	Miss Lawler.

Beginning September 15, 1914, students who matriculate with *less than three units* in Mathematics, and who elect Mathematics, *must* take Course 1.

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* See other courses in Mathematics and Applied Mathematics, College of Engineering.

2. Algebra, Trigonometry (as above).—Analytical Geometry of Two Dimensions.

Sec. I, M., W., F., 9:30-10:30. Assistant Professor Moore.
Sec. II, M., W., F., 10:30-11:30. Miss Lawler.

Beginning September 15, 1914, students who matriculate with *three or more units* in Mathematics, and who elect Mathematics, *must* take Course 2.

[3. Analytical Geometry of Two and Three Dimensions.]
Sec. I. Omitted in 1914-15.
Sec. II. Omitted in 1914-15.

Sophomores who have taken Course 1, and Freshmen (by special permission) who enter *with four units* in Mathematics, may take Course 3.

5. Calculus. Differential and Integral.—Osborne, *Calculus;* Davis, *Calculus.*

Sec. I, M., T., Th., F., 10:30-11:30. Professor Hancock.

For Undergraduates and Graduates

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 9:30-10:30. Professor Hancock.

37. Modern Geometry.—S., 9:30-11:30.
Assistant Professor Moore.

[8a. Advanced Integral Calculus.] Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*
Omitted in 1914-15. Professor Hancock.

[9b. Differential Equations.] Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*
Omitted in 1914-15. Professor Hancock.

Primarily for Graduates

35. Advanced Algebra.—Part III.—M., Th., 4:00-6:00.
Professor Hancock.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with applications to problems in heat, electricity, potential, elasticity, etc. *Second semester,* Th., 4:00-6:00; S., 9:30-10:30.
Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. *First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to number of hours elected. Hours by special arrangement. Professor Slocum.

The following courses which are given from time to time will be omitted in **1914-15:**

16a. Theoretical Mechanics.

16b. The Mathematical Theory of Elasticity.

26. The History and Teaching of Mathematics.

30. Theory of Numbers, Part I.—Natural Numbers.

31. Theory of Numbers, Part II.—Algebraic Numbers.—Dedekind's Theory.

32. Theory of Numbers, Part III.—Kronecker's Theory.

24. Elliptic Functions, Part I.—Analysis.

25. Application of Elliptic Functions, Part II.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.

36. Vector Analysis.

28. Theory of Functions.—Lectures on the Theory of Functions of a Complex Variable.

29. Theory of Functions of a Real Variable.

33. Advanced Algebra.—Part I. Lectures.

34. Advanced Algebra.—Part II.

18a. Theory of Minimal Surfaces.

Evening Courses

40. Algebra—Trigonometry.—Selected portions of algebra and the elementary Theory of Equations. Ashton and Marsh, *College Algebra.* Trigonometry: Rothrock, *Trigonometry.* F., 7:30-9:30. Mr. Smith.

42. Analytical Geometry and Elementary Calculus. W., 7:30-9:30. Mr. Kindle.

PHILOSOPHY

GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.
HENRY G. HARTMANN, Ph. D., . Assistant Professor of Philosophy.

For Undergraduates

1a. Introduction to Philosophy.—Open to students who have completed one year of University work. *First semester,* M., W., F., 11:30-12:30. Assistant Professor Hartmann.

1b. Philosophical Idealism Historically and Critically Treated.—*Second semester,* M., W., F., 11:30-12:30.
Assistant Professor Hartmann.

2a. Introduction to Logic.—Open to students who have completed at least one year of University work. *First semester,* M., W., F., 9:30-10:30. Professor Tawney.

For Undergraduates and Graduates

2b. Theory of Scientific Method.—*Second semester,* M., W., F., 9:30-10:30. Professor Tawney.
Prerequisite: Course 2a.

3a. History of Philosophy from the Italian Renaissance to the Time of Kant.—Open to students who have completed one year of University work. *First semester,* M., W., F., 8:30-9:30.
Professor Tawney.

3b. History of Modern Philosophy from the Time of Kant.—Courses 3a and 3b alternate biennially with Courses 4a and 4b. *Second semester,* M., W., F., 8:30-9:30. Professor Tawney.
Prerequisite: Course 3a.

[4a. History of Philosophy to the Beginning of the Christian Era.] *First semester,* M., W., F., 8:30-9:30.
Omitted in 1914-15. Assistant Professor Hartmann.

[4b. History of the Philosophy of the Middle Ages.] *Second semester,* 8:30-9:30. Assistant Professor Hartmann.
Omitted in 1914-15.

5a. Ethics.—Open to students who have completed two years of University work. *First semester.*
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., F., 1:00-2:00.
Assistant Professor Hartmann.

5b. Ethical Interpretations.—*Second semester,* M., W., F., 10:30-11:30. Professor Tawney.
Prerequisite: Course 5a.

6a. History of Ethics.—*First semester,* T., Th., 11:30-12:30.
Prerequisite: Course 5a. Assistant Professor Hartmann

6b. History of Moral Ideas.—*Second semester,* T., Th., 11:30-12:30. Assistant Professor Hartmann.
Prerequisite: Course 5a.

8a. Social Psychology.—See Psychology 8a. This course counts toward a major in philosophy. Psychology 1a prerequisite.
Assistant Professor Hartmann.

8b. Aesthetics, the Science of the Beautiful.—*Second semester,* M., W., F., 9:30-10:30. Assistant Professor Hartmann.
Prerequisite: Psychology 1a.

11. Contemporary Philosophy.—S., 9:30-10:30.
Prerequisite: Philosophy 3b. Professor Tawney.

Primarily for Graduates

9. The Methods of Certain Ethical Systems.—Th., 1:00-3:00.
Assistant Professor Hartmann.

10. Types of Philosophical Realism Historically and Critically Treated.—T., 1:00-3:00. Professor Tawney.

For Teachers

11. Contemporary Philosophy.—S., 9:30-10:30.
Professor Tawney.

Evening Courses

22. Ethics.—Th., 4:45-6:45.
Assistant Professor Hartmann.

23. Logic.—M., 7:30-9:30. Professor Tawney.

It should be remembered that work in the Department of Philosophy is facilitated by courses in psychology, sociology, political science, general history, economics, the history of education, aesthetics, and other allied subjects dealing with human life and the products of civilization.

PHYSICAL EDUCATION

Alfred Brodbeck, ... Director of Physical Education.
Marguerite Gray, A. B., . . . Instructor in Physical Education.

Physical Training for Men.—All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: Three hours per week for all members of the Freshman class (lectures on hygiene, one hour, work in the gymnasium, two hours), and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A physical examination is required of each student of the two lower classes upon entrance and upon completion of the required work. Appointments for the examination must be made with the Physical Director at the beginning of the first semester.

Credit: One credit will be given for each semester's work.

Hours.—Phys. Ed. 1 (Freshmen). Gymnasium, T., Th., 10:30-11:30; M., W., 11:30-12:30; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 4:00-5:00; T., Th., 11:30-12:30. Boxing, wrestling, fencing (voluntary). Mr. Brodbeck.

Physical Training for Women.—The work is arranged with a view to obtaining the best hygienic, corrective and recreative results. A physical examination will be made at the beginning of the Freshman and at the end of the Sophomore year.

The course for Freshmen consists of three hours attendance per week throughout the year. Two hours each week are spent in exercising in the gymnasium; the other hour is devoted to lectures on hygiene. The lectures must be attended by every member of the Freshman class, irrespective of the fact that she may be excused from the gymnasium work.

The course for Sophomores consists of two hours of exercise in the gymnasium, prescribed for all members unless excused by the Director of Physical Education or on a physician's certificate.

Credit: One credit will be given for each semester's work.

Hours—Phys. Ed. 1 (Freshmen), M., W., 1:00-2:00; M., W., 2:00-3:00; Lecture, F., 2:00-3:00.

Phys. Ed. 2 (Sophomores), T., Th., 1:00-2:00; T., Th., 2:00-3:00.

Voluntary Class.—F., 1:00-2:00. Miss Gray.

PHYSICS

Louis Trenchard More, Ph. D., ... Professor of Physics.
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.
Assistants: Mr. Evens, Mr. Lorenz, A. M.

For Undergraduates

26a. General Physics.—Lectures and recitations on mechanics, sound, and heat, illustrated with lecture experiments. *First semester*, M., W., F., 11:30-12:30. Professor More and Dr. Gowdy.

27b. General Physics.—Lectures and recitations on light, electricity and magnetism, illustrated with lecture experiments. *Second semester,* M., W., F., 11:30-12:30.

Professor More and Dr. Gowdy.

N. B.—The above courses are designed for students in the College of Liberal Arts only; they may be elected in the Freshman year. They will present the fundamental laws and phenomena of physics, and will be non-mathematical in treatment. Taken with Courses 2a and 22b, Experimental Physics, they satisfy the science requirement.

2a. Experimental Physics.—Laboratory work arranged to accompany General Physics. *First semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., F., 1:00-4:00 (for Engineers only).
Sec. IV, W., 1:00-4:00.

22b. Experimental Physics.—Laboratory work arranged to accompany General Physics. *Second semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00-4:00.
Sec. III, M., W., F., 1:00-4:00 (for Engineers only).

28a. Advanced General Physics.—Lectures and recitations on Mechanics and Heat. *First semester.* Twice weekly.

Dr. Porter.

29b. Advanced General Physics.—Lectures and recitations on Light, Electricity, and Magnetism. *Second semester.* Twice weekly.

Dr. Porter.

Prerequisites for Courses 28 and 29 are Courses 26 and 27, and Mathematics 1.

4. Advanced Experimental Physics.—Experiments in photometry, spectrum analysis, calibration of weights and thermometers, etc., requiring exact measurement. Credit according to periods elected. Dr. Gowdy.

For Undergraduates and Graduates

[3a. Theoretical Mechanics.] A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30. Omitted in 1914-15. Professor More.

[18b. Theory of Electricity and Magnetism.] A course of lectures on the mathematical laws of electricity and magnetism. *Second semester,* T., Th., S., 11:30-12:30. Professor More.
Omitted in 1914-15.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester,* T., Th., S., 11:30-12:30. Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit according to number of hours elected. Professor More.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Without credit. Mr. Evens.

For Graduates Only

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1913-14 the lectures discuss the theory of heat and generalized co-ordinates; 1914-15, electricity and magnetism; 1915-16, light. Twice weekly. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Daily. Professor More and Associate Professor Allen.

For Teachers Only

11. Laboratory Methods for Teachers.—This course comprises a set of experiments designed especially for teachers. The exercises will include those which are usually given in schools, and also those of a more difficult nature which illustrate the theoretical principles. S., 8:30-11:30. Dr. Porter.

Evening Courses

30a. General Physics.—Lectures with demonstrations on mechanics, heat, and sound. *First semester,* M., 7:30-9:30.
Associate Professor Allen.

30b. General Physics.—Lectures with demonstrations on light, electricity, and magnetism. *Second semester,* M., 7:30-9:30.
Associate Professor Allen.

31a. Experimental Physics.—Laboratory work to accompany General Physics. *First semester.* Sec. V, W., 7:30-9:30.
Dr. Porter.

31b. Experimental Physics—Laboratory work to accompany General Physics. *Second semester.* Sec. V, W., 7:30-9:30.
Dr. Porter.

POLITICAL AND SOCIAL SCIENCE

Selden Gale Lowrie, Ph. D., . . Professor of Political Science.
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.

POLITICAL SCIENCE

1. American Government.—The primary aim of this course is to prepare for the duties of citizenship and lay a foundation for the further study of political science. The nature and organization of our federal government will be studied the first semester, and state and local government will be studied the second semester. M., W., F., 10:30-11:30. Assistant Professor Gardner.

For Undergraduates and Graduates

2a. European Governments.—A study of the nature and organization of the principal governments of Europe. *First semester,* M., W., F., 11:30-12:30. Assistant Professor Gardner.

Open to Juniors and Seniors and to those students taking Course 1.

2b. International Law.—A study of the principles, rules, and customs controlling the states of the civilized world in their relation to each other. *Second semester,* M., W., F., 11:30-12:30.
Professor Lowrie.

Open to Juniors and Seniors and to those students taking Course 1.

6a. Public Finance and Taxation.—An introductory course in the principles of taxation and the methods of levying and collecting

taxes—federal, state, and local. Also a study of the budget systems of the countries of the world as well as of states and cities. *First semester,* T., Th., 8:30-9:30. Professor Lowrie.

Open to Juniors and Seniors and to those students who have taken Economics 1.

11a. Municipal Government.—A comparative study of municipal organization and administration in the United States and in European countries. *First semester,* M., W., F., 8:30-9:30.

Assistant Professor Gardner.

11b. Municipal Functions.—A study of the activities of the modern city. Special attention will be given the problems involved in the contemporary development of Cincinnati. This course will be given in co-operation with the Municipal Reference Bureau. *Second semester,* M., W., F., 8:30-9:30.

Assistant Professor Gardner.

[4b. Political Parties and Party Methods.] A study of the theory and organization of political parties in the United States with particular reference to party methods and machinery. *Second semester,* T., Th., 8:30-9:30. Assistant Professor Gardner.

Omitted in 1914-15.

17b. Constitutional Law.—A study of the American Constitution, and its development through judicial interpretation. *Second semester,* T., Th., 8:30-9:30. Assistant Professor Gardner.

Open to those who have had Course 1.

25. Seminar in Municipal Government.—A study will be made of the function of a modern city with special reference to Cincinnati. Given in co-operation with the Municipal Reference Bureau. M., 4:00-6:00. Professor Lowrie.

Open to those who have had Courses 11a and 11b, and to others by permission.

3. Political Theory.—The first semester of this course will be devoted to a study of the development of ancient, medieval, and modern political thought, including a brief survey of American theory. The work of the second semester will consist principally of an analysis and criticism of various political concepts, such as the origin, nature, and functions of the state; sovereignty; government; liberty, etc. Either semester may be taken separately. Open to Seniors and graduate students. W., 4:00-6:00.

Assistant Professor Gardner.

Evening Course

30. Municipal Government.—A study of the organization, power, and functions of American municipalities, together with a brief survey of the governments of modern English, French, and

Prussian cities. Throughout the course special emphasis will be placed upon the operation of city government, with particular reference to contemporary government in Cincinnati. M., 7:30-9:30.
Assistant Professor Gardner.

SOCIAL SCIENCE

For Undergraduates

5. Elementary Sociology.—An introductory course designed to present a working theory of the nature of society, the prevailing types of social organizations, and the larger problems connected therewith. The nature of sociology, facts of social evolution, social control, social organization, social ideals, social pathology, methods of social investigation, and the history of sociology. T., Th., 9:30-10:30. Assistant Professor Parker.

For Undergraduates and Graduates

7. Modern Social Theories.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, Small, and others. Particular attention is given to the development of social theory and to the consequences of the theories of these writers in the field of practical social reform. M., W., 10:30-11:30. Assistant Professor Parker.

15. Modern Philanthropy.—A study of the problems of charity. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. As an integral part of this course there will be a series of lectures on the scope and method of the work of the Associated Charities, the Department of Charities and Corrections of the City of Cincinnati, the House of Refuge, the Juvenile Court, the Juvenile Protective Association, the National Child Labor Organization, and the Social Settlement. M., W., 9:30-10:30.
Assistant Professor Parker.

20. Criminals and Delinquents.—Problems of Crime. Criminal anthropology, physical and psychical. Criminal diagnostics, definition of crime, detection and identification of criminals, state control of criminals. Criminal therapeutics, penalties, punishment and reformation of criminals, jails, prisons, and reformatories. Criminal hygienics, police prevention of crime, presumptive criminals. Principles of scientific penology, lynch-law, and the trend of crime in modern times. T., Th., 10:30-11:30.
Assistant Professor Parker.

21. Social Problems.—A study of current social problems and the influence of certain factors in social evolution. The function, origin, forms, development, and problems of the family. Problems

of population, immigration, the negro, the city, poverty and pauperism, education, and social progress. T., Th., 11:30-12:30.

Assistant Professor Parker.

22. Seminary.—Opportunity is here given for the detailed study of special problems in social science. Credit according to number of hours elected; minimum, two hours; maximum, four hours.

Assistant Professor Parker.

Evening Course

5. Elementary Sociology.—A fundamental course dealing with the origin, composition, evolution, and functions of society. Special attention will be given to the study of the existing social organization and certain of the larger problems connected therewith. This course is designed to be introductory to all advanced work in the field of Social Science. Th., 7:30-9:30.

Assistant Professor Parker.

PSYCHOLOGY

Burtis Burr Breese, Ph. D., ... Professor of Psychology.
Schachne Isaacs, A. M., ... Assistant in Psychology.

For Undergraduates

1a. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. *First semester.* M., W., F., 11:30-12:30. Professor Breese.

1b. A continuation of 1a.—Section 1. *Second semester.* M., W., F., 11:30-12:30. Professor Breese.

For Undergraduates and Graduates

2a. Experimental Psychology.—Laboratory course. *First semester,* M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—A continuation of 2a. *Second semester,* M., W., F., 2:00-4:30.

Professor Breese and Mr. Isaacs.

8a. Social Psychology.—The aim of this course is to exhibit the human mind in its development within a social environment; to show how, under the influence of the social environment, the native tendencies of the mind become gradually organized into systems of increasing complexity, and the ways in which they co-operate in shaping and sustaining such institutions as come to exist among men in civilized societies. Open to students who have had Introductory Psychology. *First semester,* M., W., F., 9:30-10:30.

Dr. Hartmann.

9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.

Professor Breese and Mr. Isaacs.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

14. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Th., 3:00-5:00. Professor Breese.

6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Two credit hours. Hours to be arranged. Professor Breese.

For Teachers

5. Elements of Psychology.—A general account of the facts of mental life and their application to education. One credit per semester for A. B. S., 11:30-12:30. Professor Breese.

Evening Course

10. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. T., 7:30-9:30. Professor Breese.

ROMANCE LANGUAGES

Phillip Ogden, Ph. D., . . . Professor of Romance Languages.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Leroy James Cook, A. M., ... Instructor in French.

FRENCH

For Undergraduates

1. Elementary French.—Fraser and Squair, *French Grammar and Reader;* Aldrich and Foster, *A French Reader;* Enault, *Le Chien du Capitaine;* Coppée, *On rend l'argent.* Composition based on Fraser and Squair's *French Reader.*

Sec. I, M., W., F., 11:30-12:30.

Sec. II, T., Th., S., 8:30-9:30. Mr. Cook.

Course 1 is open to students who have had no French in the high school.

2. Intermediate French.—*First semester,* Fraser and Squair's *French Grammar,* Part II; François, *French Prose Composition;* dictation and modern texts. *Second semester,* nineteenth century prose writers, etc. Dictation and composition.

Sec. I, M., W., F., 9:30-10:30.
Sec. II, M., W., F., 9:30-10:30.
Sec. III, T., Th., S., 9:30-10:30. Mr. Cook.

Course 2 is open to students who have taken Course 1 or who have had two years of French in the high school.

11. French Literature in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Daudet; Hugo; Zola; Loti. M., W., F., 10:30-11:30. Professor Ogden.

Course 11 is open to students who have passed in Course 2.

3. French Composition.—Review of the more difficult points in French Grammar and Syntax. Dictation. Reproduction of narrative and descriptive passages read by the instructor from French authors. Conversation. Original composition in French. T., Th., 11:30-12:30. Mr. Cook.

With the permission of the instructor.

Course 3 is open to students who have taken Course 2.

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Corneille, Racine, Molière. T., Th., 9:30-10:30. Professor Ogden.

Course 4 is open to students who have passed in Course 11.

5. French Drama in the Nineteenth Century. Rapid reading of modern plays. W., F., 1:00-2:00. Mr. Cook.

10. Old French Readings.—Constans, *Chrestomathie de l'Ancien Français.* Lectures on historical French grammar. M., 4:00-6:00. Professor Ogden.

Course 10 is open to students who have passed in Course 4 or its equivalent.

24. The Letter and Memoir Writers of the Eighteenth Century.—T., 4:00-6:00. ————.

Course 24 is open to students who have passed in Course 4 or Course 11.

26, French Drama in the Nineteenth Century.—Lectures; outside reading; conversation in French. T., Th., 8:30-9:30. Professor Ogden.

For Teachers

30. Intermediate French.—Grammar, composition, conversation. One credit per semester for A. B. S., 10:30-11:30. Mr. Cook.

24. Course 24, outlined above, is open to teachers, by permission, as well as to regular students.

Teachers who are pursuing graduate studies and are qualified to do advanced work in the Romance languages can elect courses from the above upon advice from the head of the department.

SPANISH

For Undergraduates

6. Elementary Spanish.—Pronunciation, grammar, composition, conversational drill. Text-books: Bassett, *Spanish Grammar;* Hills, *Spanish Tales;* Ramos-Aza, *Zaragüeta.*. M., W., F., 10:30-11:30. Assistant Professor Bassett.

Course 6 is open to students who have had no Spanish in the high school.

9. Intermediate Spanish.—Selected texts since 1850. Valera, *Pepita Jiménez;* Pereda, *Pedro Sánchez;* Pérez Galdós, *Doña Perfecta;* Hartzenbusch, *La coja y el encogido.* M., W., F., 1:00-2:00. Assistant Professor Bassett.

18. Spanish Composition.—Systematic practice in speaking and writing. Review of syntax. Business forms. Bassett, *Spanish Composition;* Román y Salamero, *El castellano actual;* Harrison, *Spanish Correspondence.* T., Th., 1:00-2:00. Assistant Professor Bassett.

Courses 9 and 18 must be preceded by Course 6 or by two years of Spanish in the high school.

14. The Nineteenth Century.—Representative works from leading Spanish authors of the past hundred years. Alarcón, Becquer, Fernán Caballero, Larra, Zorrilla, etc. M., W., F., 2:00-3:00. Assistant Professor Bassett.

Course 14 must be preceded by Course 9.

For Undergraduates and Graduates

8. Spanish Literature in the XVI and XVII Centuries.—Cervantes, *Don Quijote;* selected plays by Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. Two hours, to be arranged. Assistant Professor Bassett.

Course 8 alternates with Course 22.

[22. The Picaroon Novel.] *Lazarillo de Tormes;* Alemán, *Guzmán de Alfarache* (Part I); Cervantes, *Novelas ejemplares* (selections); Espinel, *Marcos de Obregon.* Two hours, to be arranged. Assistant Professor Bassett.

Course 22 alternates with Course 8.

Omitted in 1914-15.

Evening Courses

31. Elementary Spanish.—Pronunciation, grammar, oral practice, and introductory reading. F., 7:30-9:30.

Assistant Professor Bassett.

32. Advanced Spanish.—Grammar review and written exercises, selected prose texts, business and letter forms, practice in speaking. T., 7:30-9:30. Assistant Professor Bassett.

ITALIAN

For Undergraduates

[7. Elementary Italian.] Grandgent, *Italian Grammar;* De Amicis, *Cuore;* Serao, *All' Erta, Sentinella;* Testa, *L'oro e l'orpello;* Giacosa, *Come le foglie.* M., W., F., 11:30-12:30.

Omitted in 1914-15. Assistant Professor Bassett.

For Undergraduates and Graduates

16. Italian Prose in the XIX Century.—Fogazarro, Amicis, D'Annunzio, Verga. Two hours, to be arranged.

Professor Ogden.

SPECIAL ANNOUNCEMENT

Professor Anatole Le Braz, of the University of Rennes, during the months of January, February, and March, 1915, will deliver a series of lectures in French under the joint auspices of the Ropes Foundation and the Alliance Française. The general subject of the course will be "The Celtic Influence in Literature." Certain of these lectures will be open to the public.

SIX-YEAR COMBINED COLLEGIATE AND MEDICAL COURSE.

(Leads to the degrees B. S., M. D.)

The entrance requirements to this course will be those of the College of Liberal Arts of the University of Cincinnati. (See p. 43.) The first year of the course will consist of the following courses, which are described in the Announcement of the College of Liberal Arts under the corresponding numbers. *It should be noted that five hours of credit for a laboratory course includes three lecture hours and two laboratory periods of three hours each:*

First Year

Chemistry—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. If a student enters with advanced credits in chemistry, he shall take physical chemistry.

Physics—*5 hours:* Lecture Courses 26 and 27; Laboratory Courses 2 and 22.

English—*3 hours:* Course 1.

German—*3 hours,* Course 1; or French—*3 hours,* Course 1.

Physical Education—*1 hour.*

The one-year college course in German is equivalent to two years in the High School, and in addition to this, as will be seen, there will be required, in the second year, a course in Scientific German, aimed to give the student a reading knowledge of German. Students who present on entrance an equivalent of German 1, and a reading knowledge of German, are required to take French 1 in their first year, and may substitute an elective for Scientific German in the second year; or those who present only the equivalent of German 1 will be obliged to take the Scientific German of the second year schedule in their first year. In this case French may be taken in the second year in place of German.

Second Year

Chemistry—*5 hours:* First semester, Courses 5 and 6 which have been formed by abbreviating and combining courses formerly described as 5, 6, and 7. Second semester, organic chemistry, Courses 8 and 9.

Biology—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. In addition to this, students are recommended to take a summer course in Biology at the Marine Biological Laboratory, Woods Hole, Mass.

Scientific German—*3 hours* (see paragraph on French and German under "First Year").

Elective—*3 hours.*

The third, fourth, fifth, and sixth years of this combined course are the regular years of the Medical College.

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*DRAWING, MODELING, AND CARVING

By an arrangement with the Art Academy of Cincinnati (originally established as the McMicken School of Design in 1869, and a department of the University of Cincinnati from 1871 to 1884, when it was transferred to the Cincinnati Museum Association) students of the University may elect courses in Drawing, Modeling, and Carving at the Art Academy in 1913-14, and, upon presentation of the proper certificate from the Director of the School, may receive credit in the Registrar's office for such courses as part of the total number of "credits" required for the degree of Bachelor of Arts. On the payment of a fee of twenty-five dollars at the office of the Art Academy, the student is admitted to the several day classes (drawing, modeling, carving, and design). For the night classes the fee is five dollars. In the Summer Term of ten weeks no instruction is given at night. The Winter Term extends from September 22, 1913, to May 29, 1914, the Summer Term from the middle of June to the end of August.

The following courses of instruction are offered:

1. Free-hand Drawing.—From objects and casts. Day classes, M., W., F., 8:45-12:45, or M., T., W., Th., F., 1:00-4:00, and S., 8:45-12:45. Night classes, T., Th., F., 7:15-9:15.

Miss Young, Miss Miller, Miss Lord,
Miss Wilson, and Mr. Wiessler.

Color work in oils, water colors, or pastels is also taught in the day classes, but not at night.

2. Drawing and Painting from Life.—Figure or head. Day classes, M., T., W., Th., F., S., 8:45-12:45, and M., T., W., Th., F., 2:00-4:00. Night classes, M., T., W., Th., F., 7:15-9:15.

Mr. Duveneck, Mr. Meakin, and Mr. Wessel.

Artistic Anatomy is a part of this course. The night classes draw the head or figure from life.

3. Modeling.—From casts. Day classes, T., Th., S., 8:45-12:45. Night classes, M., W., 7:15-9:15. Mr. Barnhorn.

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* For the teachers' training course in art, see announcement of the College for Teachers.

4. Modeling. Advanced Course.—From life. Day classes, M., T., W., Th., F., S., 8:45-12:45. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Barnhorn.

5. Wood Carving.—M., W., F., 12:30-4:30, and S., 8:45-12:45. Mr. Fry.

6. Decorative Design.—The principles of design, preparation of decorative motives, and their application to metals, enamels, leather, porcelain, etc. T., W., Th., F., 1:30-4:30. Miss Riis.

From the courses above offered a student may elect not more than six hours in any one semester. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

COLLEGE FOR TEACHERS

The College for Teachers is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati.

COMMITTEE IN CHARGE

CHARLES WILLIAM DABNEY, PH. D., LL. D., President of the University.
ALFRED K. NIPPERT, Member of the Board of Directors of the University.
RANDALL JUDSON CONDON, A. M., Superintendent of Cincinnati Schools.
ALBERT D. SHOCKLEY, . . . Member of the Board of Education.

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, PH. D., LL. D., President of the University.
RANDALL JUDSON CONDON, A. M., Superintendent of Cincinnati Schools.
WILLIAM PAXTON BURRIS, A. M., L. H. D., Professor of the History and Principles of Education, and Dean of the College for Teachers.
JOHN WILLIAM HALL, A. M., Professor of Elementary Education.
HENRY SKINNER WEST, Ph. D., Professor of Secondary Education.
BURTIS BURR BREESE, PH. D., ... Professor of Psychology.
NEVIN MELANCTHON FENNEMAN, PH. D., Professor of Geology and Geography.
GUY ALLAN TAWNEY, PH. D., ... Professor of Philosophy.
HARRIS MILLER BENEDICT, PH. D., ... Professor of Botany.
ISAAC JOSLIN COX, PH. D., . . . Associate Professor of History.
CYRUS DE WITT MEAD, A. M., Assistant Professor of Elementary Education.
J. ERNEST CARMAN, B. S., M. Di., . Assistant Professor of Geology.
HENRY GOTTLIEB HARTMANN, Ph. D., Assistant Professor of Philosophy.
ABBIE LOUISE DAY, B. S., B. Di., Instructor in Elementary Education.
VERNON LANTIS, A. M., ... Instructor in Botany.
ANNETTE BRAUN, PH. D., ... Instructor in Biology.
WALTER BUCHER, Ph. D., . . Instructor in Geology and Geography.
SCHACHNE ISAACS, A. M., ... Assistant in Psychology.

OTHER OFFICERS OF INSTRUCTION

Courses in special subjects are given by the following persons connected with the Cincinnati public schools:

WALTER H. AIKEN . . . . . Music.
WILLIAM H. VOGEL . . . . . Art and Hand Work.

Carl Ziegler, M. D. . . . . Physical Training and Hygiene.
A. H. Steadman . . . . . Penmanship.
H. H. Fick, Ph. D., ... German.
Julia S. Bothwell . . . . . Kindergarten.
Mary Elizabeth Hyde . . . . . Art.
William P. Teal . . . . . Art.
Jeannette Swing . . . . . Art.
Emma Kohnky, A. M., ... Teaching of Defectives.

The technical instruction and training in kindergarten courses is given by the following persons on the teaching staff of the Cincinnati Kindergarten Training School:

Lillian H. Stone . . . . . Principal.
Grace Anna Fry . . . . . Supervisor.
*Josephine Simrall . . . . . Instructor.
Elsie Hobart . . . . . Instructor.
John Jerome Thompson . . . . . Art.
Mrs. W. E. Lewis . . . . . Physical Training.
Marie Curtis Rains . . . . . Instructor.

At the Art Academy of Cincinnati:

Elizabeth Kellogg . . . . . History of Art.

GENERAL STATEMENT

The College for Teachers is the department of education of the University. It is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati. It is primarily a professional school for the training of teachers under University auspices, in close touch with a cosmopolitan public school system which serves as a working laboratory for teachers and students of education. Affiliated with the college are the Cincinnati Kindergarten Training School, the Art Academy of Cincinnati, and the Cincinnati Public Schools.

GENERAL REGULATIONS

The conditions governing admission, graduation, prerequisites, privileges, etc., vary with the different professional programs offered, and are best indicated in connection therewith, as follows:

PROGRAM I. For those fitting, primarily, for positions in elementary schools.

Admission.—This program is open to Seniors and graduates, and may be pursued during a single year.

* Absent on leave.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts without being compelled to carry more than three hours work per semester in addition to the courses in education indicated below.

Prerequisite Courses.—Before entering upon this program students must have had, as a part of their college courses, and as suitable prerequisites to the courses in education, the equivalent of the following:

Psychology, three hours per week for one year.
Ethics, three hours per week for one-half year.
Physiography, five hours per week for one year.
American history, three hours per week for one year.

Those who have had a year's study in American history in high school shall be exempt from the requirement in this subject.

Courses Required.—

Education 1	6 credits.
Education 2	6 "
Laboratory work (30 hours practice teaching in connection with Education 2)	2 "
Education 4	2 "
Elected from the following	8 "
Education 14	4 credits.
Education 16	2 "
Education 20	2 "
Education 22	2 "
Total	24 credits.

Graduation and Privileges.—Seniors who complete the above courses in education may count the same toward the A. B. degree in the McMicken College of Liberal Arts and receive a Teacher's Diploma from the College for Teachers.

All students pursuing this program have the further privilege of taking the brief courses in special subjects given by supervisors of the city schools on Saturday mornings (Education 32, 34, 36 and 38), in lieu of passing examinations in the teaching of these subjects.

PROGRAM II. For those fitting, primarily, for positions in secondary schools.

Admission.—This program is open only to graduates, with the approval of the Dean of the College for Teachers, the Dean of the Graduate School, and the head or heads of the University

departments in which the student wishes to pursue advanced study; it may be taken in a single year. Students must give satisfactory evidence that they are well qualified, personally and otherwise, to undertake the work of this program and to become teachers in secondary schools. Such students must be willing to give from 6 to 12 periods per week as assistants in high school departments in which they are preparing to teach. Before registration a student must also be accepted by the principal of the high school and the head of the high school department in which apprenticeship is to be served; and in no case while pursuing this program will a student be permitted to choose more than the maximum of hours indicated below.

PREREQUISITE COURSES.—Psychology and Ethics, as indicated in Program I.

COURSES REQUIRED.—

Education 1, as indicated in Program I.....	6	credits.
Education 3	4	"
Education 3p, Practical Work (high school assisting)	2	"
Graduate work in not more than two subjects which the student is best qualified to teach	12	"
Total	24	credits.

PROGRAM III. For those fitting, primarily, for positions in kindergartens.

ADMISSION.—This program is open to Seniors and graduates and may be pursued during a single year.

Seniors must have not less than ninety credits in the College of Liberal Arts, including all required courses in that college, and the prerequisite courses indicated below.

PREREQUISITE COURSES.—

Psychology, as in Program I.
Ethics, as in Program I.
Education 1.

COURSES REQUIRED.—See list under Kindergarten Training, page 132.

GRADUATION AND PRIVILEGES.—Graduates who have completed the above program in a satisfactory manner may count the same toward the degree of Bachelor of Arts in Education conferred

by the College of Liberal Arts and the College for Teachers jointly, and receive diplomas from the Cincinnati Kindergarten Training School certifying that they are qualified to be directors in kindergartens. They will also be eligible to appointment in the local public kindergartens without examination except in the Theory and Practice of Kindergartening.

PROGRAM IV. For those fitting, primarily, for positions as teachers of German in elementary schools.

ADMISSION.—This program is open to Seniors and graduates, and may be pursued during a single year.

Seniors must be prepared to fulfill all the requirements for graduation in the College of Liberal Arts, toward which this program will count to the extent of eighteen credits.

PREREQUISITE COURSES.—Before entering upon this program students must have had, as a part of their previous college courses, and as suitable prerequisites to courses in education, the equivalent of the following:

Psychology, as in Program I.

Ethics, as in Program I.

For those who have had no German in high school, the equivalent of German 1, 2, 3, 4, 21, 5 and 10 or 30.

For those who have had two years of German in high school, the equivalent of German 2, 3, 4, 21, 5 and 10 or 30.

For those who have had four years of German in high school, the equivalent of German 4, 21, 5 and 10 or 30.

In no case will students be permitted to enter upon this program without the ability to speak the German language readily and fluently.

COURSES REQUIRED.—

Education 1	6 credits.
Education 2	6 "
Education 4	2 "
Education 30, with fifteen hours practice per semester	4 "
Total	18 credits.

GRADUATION AND PRIVILEGES.—The same as in Program I, with the following modifications:

The restrictions as to the amount of other work to be carried by students does not apply to those pursuing this program. They shall, however, submit their cards to the Dean of the College for Teachers for his approval before registration. They should also arrange, if possible, to take the courses given on Saturday mornings by the Supervisors of Drawing and Music in lieu of examinations in these subjects.

PROGRAM V. For those fitting for positions as instructors in education, supervisors, critic teachers, or administrators in educational positions requiring experience and advanced study.

For meeting the needs of this class of students appropriate opportunity is given in advanced courses in education, including seminar work, and such courses may be counted toward fulfilling requirements for the higher degrees conferred by the Graduate School. For further information see statements in connection with the description of various courses.

PROGRAM VI. For those fitting for positions as teachers or supervisors of art.

See pages 134-136.

PROGRAM VII. For those fitting for the teaching of defective children.

Admission.—This program is open to Seniors and graduates and may be pursued during a single year.

Prerequisite Courses.—Psychology, three hours per week, for one year, and ethics, three hours per week, for one-half year.

Courses Required.—

Education 1	6 credits
Education 2	6 "
Psychology 9	4 "
Education 11	4 "
Education 14	4 "
Total	24 credits

SPECIAL COURSES

Special Courses are offered to teachers in Cincinnati and vicinity, and are given on Saturdays and at hours during the week which do not conflict with the duties of the class-room. Credit is given on the books of the Registrar for satisfactory work done in these courses.

For other courses open to teachers, see the announcement of the various departments of the McMicken College of Liberal Arts under the head "For Teachers."

REQUIREMENTS OF THE CINCINNATI BOARD OF EDUCATION

For the benefit of students who wish to become teachers in the schools of Cincinnati a Circular of Information has been prepared showing the method of appointment, salaries, and character of the examination for teachers who are candidates for positions in the Cincinnati Public Schools. A copy of this circular may be had upon application to the Superintendent of Schools or the Dean of the College for Teachers.

APPOINTMENT COMMITTEE

The Appointment Committee offers its services, without charge, to students seeking appointment to educational positions for which they are properly qualified. The Dean of the College as Chairman is assisted by other members of the faculty who are familiar with the student's work, and students who are candidates for appointment and who desire to avail themselves of the services of this committee are invited to register at the office of the Dean, on blanks provided for this purpose.

COURSES OF INSTRUCTION

The following is the list of courses offered for the year 1913-14. Certain of these courses are required of candidates for the first or preferred list of persons eligible to appointment in the Cincinnati schools. Others are intended to meet the needs of advanced students of education, as well as of teachers of experience. Courses which are prerequisite to the pursuit of the various professional programs for teachers are also included in this announcement, but with this exception only those which are primarily professional in character will be found here. All courses given in the University, many of which are semi-professional in character, are open to properly qualified students in the College for Teachers. (See the announcement of the McMicken College of Liberal Arts.)

EDUCATION

Education 1. History and Principles of Education.—Lectures, required reading, and discussions. Beginning with primitive society, this course considers the various conceptions of education as they have arisen in the course of history. Special attention will be given to those conceptions which have been most instrumental in shaping current tendencies.

Open to Seniors and graduates. If counted for graduate credit, additional work must be done and a thesis submitted. This course is also a prerequisite for students taking Program III, and as such may be taken during the Junior year. (See page 121.) M., W., F., 10:30-11:30. Professor Burris.

Education 2. Theory and Practice of Teaching.—Lectures, discussions, practical work, and required readings. Development of the principles of method of the recitation and their application in the proper conduct of class exercises in the several subjects of the elementary schools. Three hours of class work and fifteen hours of practice per semester. Hours for practice work must be arranged with the instructor before registration. Open to Seniors and graduates. M., W., F., 9:30-10:30. Professor Hall.

Education 3. Secondary Education.—Development of American secondary education; function of the secondary school; program of studies; educational values; theory of formal discipline; construction of curricula; method of secondary instruction; introduction to the pedagogy of typical high school subjects. Open to graduates and teachers; counting, under certain conditions, four credits. S., 9:30-11:30. Professor West.

Education 3p. High School Assisting.—Hours to be arranged. Work done in connection with Education 3. Professor West.

Education 4. School Economy.—Lectures, discussions, and required readings. This course will consider principles and practice of class-room management, including such problems as preventing the waste of time and energy, preserving hygienic conditions, discipline, grading, promotions, tests. Open to Seniors and graduates. This course may not be counted for the higher degrees. F., 11:30-12:30. Miss Day.

Education 5. Seminar in Secondary Education.—Reading and discussion of recent and current professional literature upon aspects of secondary education and problems of high school instruction. W., 4:00-6:00. Professor West.

Education 6. General Method.—This is a brief course similar to Education 2, and is intended for students who expect to become teachers of domestic science, and those who expect to become teachers of art. Students who are candidates for a degree will take Education 2 instead of this. S., 8:30-9:30. Professor Hall.

Education 7. Seminar.—A study of the principles of scientific management and their application to the problems of school administration. Open to graduates and persons of experience who are interested in the study of school administration. *Second semester.* W., 4:00-6:00. Professor Burris.

Education 9. Ancient and Medieval Education.—S., 10:30-12:00.

Education 11. Modern Education.—S., 10:30-12:00.

These two courses given in alternate years will cover the same ground as Education 1. Three credits will be allowed for each course, but no credit will be given for either course if pursued less than a year.

Education 9 will be given in 1914-15, and Education 11 in 1915-16. Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. This course is open to graduates of the College for Teachers, and is intended primarily for principals and prospective principals who wish to acquaint themselves with modern methods of measuring results in education. T., 4:00-6:00. Professor Hall and Assistant Professor Mead.

Education 13. History of Modern Education.—This course is arranged to meet the needs of students in the Cincinnati Kindergarten Training School and of those in the Course for Teachers of Art. *First semester,* M., W., F., 3:00-4:00.

Professor Burris.

Education 14. The Teaching of English.—Lectures, discussions, and required readings. This course will consider the selection and organization of the subject matter and method of treatment in the grades of the following subjects: reading, spelling, literature, composition, and grammar. Open to Seniors and graduates; it may be counted toward the A. B. degree. M., W., 8:30-9:30. Miss Day.

Education 15. Theory and Practice of Teaching Defective Children.—One hour class-room instruction and one period of practical work in teaching defective children per week. Hours to be arranged. Miss Kohnky.

Education 16. The Teaching of History.—Lectures, discussions, readings, and reports. This course aims to cover the field of history as usually presented in elementary schools. Gathering material for lesson plans, its arrangement for presentation, the consideration of difficulties involved, and the method of overcoming the same will form the basis of the course. Open to Seniors and graduates; it may be counted toward the A. B. degree. F., 8:30-9:30. Assistant Professor Mead.

Education 20. The Teaching of Mathematics.—Lectures, discussions, and required reading. This course will aim to work

up portions of material for presentation in the various grades according to the course of study, with devices and methods for their use. The principles underlying the above will be developed. Open to Seniors and graduates; it may be counted toward the A. B. degree. *Second semester,* M., W., 11:30-12:30.

Assistant Professor Mead.

Education 21. Seat Work and School Room Devices.—Seat work based upon and related to the actual class work of the grades. The use of illustrative materials, devices, and games, and the principles underlying the same. For teachers of the first four grades. S., 9:30-10:30. Miss Day.

Education 22. The Teaching of Geography.—Lectures, discussions, and required readings. This course will deal with the collection of suitable material for teaching geography in the grades and with the organization and method of presentation of this material. Open to Seniors and graduates; it may be counted toward the A. B. degree. *First semester,* M., W., 11:30-12:30.

Assistant Professor Mead.

Education 28b. Primary Teaching.—This course is for the purpose of acquainting prospective directors of kindergartens with the subject matter and method of the work done in primary grades, with special attention to the first year. Open to Seniors in the Cincinnati Kindergarten Training School. *Second semester.* Hour to be arranged. Miss Day.

Education 30. The Teaching of German.—This course consists of instruction, observation and practice teaching, and is intended especially for the teachers of German in the elementary schools. For the conditions under which students may enter this course see Program IV, p. 122. Fifteen hours of practice per semester. M., 9:30-10:30. Supervisor Fick.

Education 32. The Teaching of Art and Hand Work.—The aim of this course is to familiarize those intending to teach in the public schools with the art and hand work pursued in the elementary grades at the present time, and to place before them the best methods for obtaining satisfactory results. This course prepares for the city examination in this subject. *First semester,* S., 8:30-11:30, for twelve weeks. Given at Hughes High School.

Supervisor Vogel.

Education 34. The Teaching of Music.—The purpose of the course is to give those who contemplate teaching in the public schools, or are at present teaching, a systematic and comprehensive training in the matter and method of school music. This

course prepares for the city examination in this subject. *Second semester,* S., 8:30-9:30. Given at Hughes High School.

Supervisor Aiken.

Education 36. The Teaching of Physical Training and Hygiene.—This course is for those fitting for positions in elementary schools. It will not be considered sufficient preparation to qualify as a special teacher. The course will include theory and practice of physical exercise, gymnastic games for the school-room and play-ground, school sanitation, and methods of teaching physiology and hygiene in the grades. *Second semester,* S., 10:30-11:30. Given at Hughes High School. Supervisor Ziegler.

Education 38. The Teaching of Penmanship.—This course will present the principles underlying the system of penmanship taught in the Cincinnati public schools, and will show the best methods of teaching it, accompanied by drills for the purpose of securing technique. The course prepares for the city examination in this subject. Given at Hughes High School. *Second semester,* S., 9:30-10:30. Supervisor Steadman.

BIOLOGY

For a complete list of all the courses offered by the Department of Biology, see the announcement of the McMicken College of Liberal Arts.

Biology 38. Insect Life.—A course for beginners. Life histories of insects of importance and their relationships to man. Field trips and lectures. Two credits per semester. S., 8:30-12:30.

Dr. Braun.

Biology 100. Elementary School Gardening.—One lecture and one laboratory period per week. Two credits. Lecture, F., 1:00-2:00; laboratory, 2:00-5:00. Mr. Lantis.

Biology 101. Advanced School Gardening.—Lectures and conferences. One hour per week; 4:00-5:00 on day to be arranged.

Mr. Lantis.

ENGLISH

For a complete list of all the courses offered by the Department of English, see the announcement of the McMicken College of Liberal Arts.

English 29. Materials and Methods in Secondary English.—The organization and adaptation of the work in composition and literature to meet the needs of pupils in the secondary schools. A course designed for (1) Seniors and graduates intending to teach English in secondary schools, (2) teachers in elementary schools preparing

to teach secondary English, and (3) teachers in secondary schools already engaged in the teaching of English. S., 9:30-11:30.

Assistant Professor Young.

GEOLOGY AND GEOGRAPHY

For a complete list of all the courses offered by the Department of Geology, see the announcement of the McMicken College of Liberal Arts.

1. Introduction to the Earth Sciences.—Minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean, followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; Laboratory, T., Th., 2:00-5:00; M., W., 2:00-5:00; T., Th., 9:30-12:30; and T., Th., 1:00-4:00. Professor Fenneman, Dr. Bucher, and Assistant.

This course is a prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 144. It must be taken not later than the Junior year by those students who expect to enter upon this program during the Senior year. It may be taken as late as the Senior year by those students who wish to prepare for teaching in elementary schools after graduation from the College of Liberal Arts.

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology. Lecture, S., 8:30-10:30; field or laboratory, 10:30-1:00. Professor Fenneman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure. Lecture, S., 8:30-10:30; field or laboratory, 10:30-1:00.

Assistant Professor Carman.

16. Advanced Physiography of the United States.—Course 1 or 14 and Course 9 are prerequisite. Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

HISTORY

The following course in history is prerequisite to the study of education as outlined in the professional program for elementary teachers on p. 119 for all students who have not had a year's course in American history in high school. Those students who wish to complete this program during the Senior year should take this course in history not later than the Junior year. If the student wishes to defer preparation for teaching in the elementary

schools till after receiving the A. B. degree, this course may be taken as late as the Senior year.

For a complete list of all the courses offered in the Department of History, see the announcement of the McMicken College of Liberal Arts.

History 15. General Course in American History.—This course, while open to all, is especially recommended for those who have not had American history in the high school and for those who contemplate taking work in the College for Teachers. The work covers the period from the earliest discoveries to the present time, and is based largely upon a text-book, supplemented by regular reports and occasional lectures. Special quiz sections and conference groups at other hours if necessary. M., W., F., 8:30-9:30.

Associate Professor Cox.

History 35. The Ohio Valley and the Old Northwest.—A survey of the discovery, exploration, and settlement of this locality, and of its development to the Civil War. Lectures and special reports. Open to teachers and advanced students. The course is suggested as preparatory to History 39 and for those who teach local history in the elementary schools. S., 9:30-10:30.

Associate Professor Cox.

History 36. Method in History.—A course for secondary teachers and those preparing for positions in the high school. S., 9:30-10:30.

Professor Whitcomb,
Associate Professor Cox, and ————.

PHILOSOPHY

For a complete list of all the courses offered by the Department of Philosophy, see announcement of the McMicken College of Liberal Arts.

7a. Ethics.—An introduction to the theory of morals. The course includes, beside the theory of morality, discussion of selected problems of present moral experience. Open to students who have completed two years of work in the University. *First semester*, M., W., F., in two sections, 10:30 and 1:00.

Professor Tawney and Assistant Professor Hartmann.

This course is prerequisite to entrance upon professional programs, I, II, III, and IV, outlined on pp. 119-123. It should be taken in the Junior year by those who pursue a professional program during the Senior year. It may be taken in the Senior year by those who expect to pursue a professional program after graduation from the College of Liberal Arts.

12. The History of Philosophy.—In the fall of 1913 this course began with the philosophy of Immanuel Kant, it being part of a cycle of courses dealing with the history of philosophy. One hour throughout the year. S., 9:30-10:30. Professor Tawney.

PSYCHOLOGY

For a complete list of all courses offered by the Department of Psychology, see the announcement of the McMicken College of Liberal Arts.

Psychology 1a. Introductory Psychology.—An analytical study of mental phenomena, with special reference to accurate observation and description. A general account of the subject matter of psychology. *First semester,* M., W., F., 11:30-12:30.
Professor Breese.

Psychology 1b. Section II. Educational Psychology.—The application of the principles of psychology to education. *Second semester,* M., W., F., 2:00-3:00. Professor Breese.

Courses 1a and 1b are prerequisite to entrance upon the study of education, as indicated in professional programs for teachers outlined on pp. 119-123. Those who wish to pursue one of these programs should take these courses in psychology not later than the Junior year. Those who wish to qualify for a teacher's diploma after graduation from the College of Liberal Arts may take these prerequisite courses in psychology during the Senior year.

Psychology 6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. Two credit hours. *First semester.* Hours to be arranged. Professor Breese.

Psychology 5. Elements of Psychology.—A general account of the facts of mental life and their application to education. S., 11:30-12:30. Professor Breese.

For Teachers

Psychology 7b. Elements of Psychology.—Open to students of the Cincinnati Kindergarten Training School and to those in the Course for Teachers of Art. *Second semester,* M., W., F., 3:00-4:00. Professor Breese.

Psychology 9. Mental and Physical Tests.—Laboratory methods. Three credits per semester. Hours to be arranged.
Professor Breese and Mr. Isaacs.

KINDERGARTEN TRAINING

The following courses in Kindergarten Training, not given at the University, may be taken at the Cincinnati Kindergarten Train-

ing School. The school is located at No. 6 Linton street, Vernonville. Registration day, Thursday, September 17, 1914. Work will begin on Friday, September 18.

For conditions governing college students who are fitting primarily for positions in kindergartens, see Program III, page 121.

The Cincinnati Kindergarten Training School issues a special announcement giving full information, a copy of which may be had upon application to the Registrar at the above address.

COURSES

Kgtn. 1. Gifts.—This course has for its aim a thorough knowledge of the kindergarten material, a comparative study of typical and original plays or lessons with the gifts, and a study of Froebel's underlying principles. Juniors. *First semester,* M., 9:30-11:30. *Second semester,* two hours, to be arranged. Three credits. Miss Stone.

Kgtn. 2. Handwork.—This course includes both the old and new occupations with practice in each. Also the preparation of simple courses adapted for use in the kindergarten. *First semester,* T., 9:00-11:00. *Second semester,* Th., 2:30-4:30. Four credits. Miss Stone and Special Teachers.

Kgtn. 3. Rhythms, Songs, and Games.—Juniors and Seniors. T., 3:30-4:30, throughout the year. Three credits. Miss Fry.

Each of these courses includes theory and practice, and is intended to develop resourcefulness and originality in the student, as well as to give technical mastery of kindergarten instrumentalities.

Kgtn. 4. Theory.—This course includes an introductory study of Froebel's Mother Play as the basis for story, song, and game in kindergarten teaching. Also the study of Froebel's writings, for the purpose of discovering the educational laws which form the foundation for child development and personal culture. *First semester,* M., Th., 8:30-9:30. *Second semester,* W., 2:00-3:00. Six credits. Miss Stone, Miss Fry.

Kgtn. 5. Stories.—This course includes lectures, discussions, and reference work concerning the literature of childhood, together with regular practice in the telling of stories. Juniors and Seniors. Th., 1:00-2:00; F., 2:00-3:00. One credit.

———.

Kgtn. 6. Program Construction.—A critical résumé of every division of kindergarten work and the educational principles involved. The careful planning of programs for definite periods of time and for meeting different conditions. Seniors, *First semester,* T., 1:50-3:30. *Second semester,* W., 1:30-3:30. Four credits. Miss Bothwell.

Kgtn. 7. Observation.—Carefully supervised observation of the entire morning's work in kindergarten, followed by a discussion of the various activities and the educational principles involved. Juniors. *First semester,* hours to be arranged. Two credits. Miss Stone, Miss Fry.

Kgtn. 8. Practice Teaching.—A minimum of one-half year (days to conform to the public school calendar) in private, mission, or public school kindergartens, under at least two directors. Opportunity for increasing responsibility under careful supervision. Additional practice may be required to demonstrate the student's ability to satisfactorily conduct every phase of kindergarten work. Juniors and Seniors. Ten credits.

Miss Stone, Miss Fry.

Kgtn. 9. Organization of Mothers' Meetings.—A series of lectures covering the essentials of parliamentary law and the general purpose and subject matter of mothers' meetings. Short talks suitable for different occasions are prepared and given by the students. Seniors. *Second semester.* Two hours, to be arranged. Two credits. Miss Laws and Miss Stone.

Kgtn. 10. Art.—Rapid sketching on blackboard; brush work in ink and water color; decorative design. Art in kindergarten—decoration, pictures, and children's work. Th., 9:30-11:30. One credit. Mr. John J. Thompson.

Kgtn. 11. Music.—Study and criticism of kindergarten music, the child's voice, rhythm, and development of ear and tone. Attention to instrumental music with each student. Juniors and Seniors. *Second semester,* T., 1:30-2:30. One credit.

Supervisor Aiken.

Kgtn. 12. Hygiene and Physical Training.—This course includes lectures by specialists in each of these lines as well as class work in Physical Training. Its aim is to afford knowledge of sanitation, food, dress, exercise, rest, children's diseases, and emergencies. To give ease and grace of movement, a wise conservation and use of energy, and to correlate with games played in the kindergarten such movements as are essential to the child's general development. Juniors and Seniors. Voice Training and Physical Training, Th., 2:00-3:00. One credit each year.

Kgtn. 13. Directors' Conference.—Lectures, discussions, suggestions in program work.

Occasional talks by prominent kindergartners and specialists in education from other cities. M., 2:00-4:00, throughout the year.

Miss Bothwell.

COURSES FOR TEACHERS OF ART

The purpose of this course is to prepare students for positions as teachers of art or supervisors of art instruction in public or private schools.

Admission presupposes (a) the satisfactory completion of an approved curriculum in a secondary school, and (b) an amount of work in art of approved quality equivalent to that represented by two years of study in the Art Academy of Cincinnati. It is understood, however, that all students are admitted upon a month's probation during which they must give satisfactory evidence of a high degree of capability in art and show that they are otherwise qualified to pursue the course.

The course is two years in length, during which the student's time is divided about equally between the professional program of the College for Teachers and studies in art at the Art Academy of Cincinnati. The satisfactory completion of the course leads to graduation and a diploma certifying that the holder is qualified to teach art or supervise art instruction in public or private elementary, secondary, and normal schools.

To students seeking a teacher's training course in art, Cincinnati offers exceptional opportunities. The Art Academy is a thoroughly equipped school for the training of artists. Adjacent to it is the Cincinnati Museum, containing large collections of paintings and sculpture, as well as of the applied arts. Each month, also, special exhibits of contemporary interest are arranged. The reference library of the Museum, relating especially to art, the Public Library, and the University Library are also available. In the University various lectures are open to students. For studies in natural history students have access to the Museum of the Society of Natural History, and the Cincinnati Zoological Garden. Among the local art industries the Rookwood Pottery is of especial interest.

The work of observation and practice teaching is done in the regular public elementary and high schools of Cincinnati. This phase of the course, therefore, is conducted under the ideal conditions necessary to give the student a truly professional preparation. In connection with this practice are wrought out lesson-plans and outlines of work for the various grades of the elementary and high schools, in harmony with the requirements of a well graded course of study based upon modern educational principles. In this way the ability of students to organize a progressive course in art instruction is thoroughly tested.

For fees in the course for teachers of art see p. 28.

COURSES

The following courses of instruction, when not otherwise specified, are given at Hughes High School.

First year students will take Courses 2, 3, 4, and 5 or 9. They will spend the forenoon of each week-day, excepting Saturday, in work at the Art Academy. They will also take Education 13, the first semester, and Psychology 7b, the second semester, at the University. (See pp. 126, 131.)

Second year students will take Courses 1, 6, 7, 8, and 5 or 9. On forenoons and afternoons, when not occupied with these courses they will continue work at the Art Academy. At the University they will take Education 6. (See p. 125.)

Art 1. Theory and Practice of Teaching Art.—Principles upon which art teaching is based. The function of art in general education. Consideration of courses of study. Making of lesson plans and outlines of work for elementary and secondary schools. Principles of criticism. Discussion of methods and devices. F., 1:00-3:00. Miss Hyde.

Art 2. Water Colors and Crayons.—Landscape, nature products, pose and still life. Practice in arrangement of still life studies for the sake of good composition and harmony of color. Tu., 1:00-4:00. Mr. Teal.

Art 3. Art Design and Applications.—Study of the principles of balance, rhythm and harmony, in line, dark and light, and color. Fitness of design in form, tone and color, in relation to various applications. Design applied to embroidery, stenciling, weaving, basketry, metal and leather work. W., 1:00-3:00. Miss Hyde.

Art 4. Art Construction and Clay Work.—Paper and cardboard construction. Weaving, stenciling, book binding, block printing, metal and leather work, basketry, pottery, and knife work. Th., 1:00-3:00. Miss Hyde.

Art 5. Pictorial Composition.—Critical study of landscape composition in black and white, in tones of middle gray, and in color. Figure compositions in color. Illustrated talks on the old masters and comparisons of their work with modern art. Instruction in blackboard illustration suited to the needs of teachers of regular subjects in elementary and secondary schools. Given in alternate years. M., 1:30-4:00. Mr. Teal.

Art 6. Design and Classic Ornament.—An advanced study of questions taken up in Art 3. Study of historic ornament. Adap-

tation of nature forms in design. Influence of materials on design. Theory of color. Designing of interiors with the study of original color schemes. W., 1:30-4:00. Mr. Teal.

Art 7. Observation and Practice Teaching.—Two half-days per week in the public elementary and secondary schools under critical supervision. Webster Public School on Th., 8:30-12:00, Miss Swing, critic. Hughes High School, Tuesday forenoon, Miss Hyde, critic.

Art 8. History of Art.—A study and amplification of Reinach's Apollo with the aid of photographs and plates in the Cincinnati Art Museum Library. Students required to make notes, outlines, and chronological tables. Instruction and practice as guides of visitors to the Art Museum. At the Art Museum. Tu., 2:00-4:00. Miss Kellogg.

Art 9. Mechanical Drawing.—Use and care of materials and instruments. Simple geometric problems. Lettering. Scale drawing. Isometric and orthographic projections. Intersections. Machine drawings. House plans and elevations. Tracing and blue printing. Given in alternate years in place of Art 5. M., 1:30-4:00. Supervisor Vogel.

HOME ECONOMICS

The incorporation of a Home Economics Department in the University was effected after the copy for this Announcement was completed, too late to give any statement here in regard to courses which will be offered next year in this subject. There will be certain courses open to women of the University who wish to take the same. A curriculum for those who desire to become teachers of Home Economics will be organized, and the College for Teachers will give such courses in education as are suitable in the preparation of teachers of this subject. A special circular in regard to the work of this department, including an outline of the professional program for teachers of Home Economics, and showing the conditions of entrance, fees, etc., may be had upon application.

SCHEDULE OF LECTURES, FIRST SEMESTER, 1914-15

Courses which are starred are open to Freshmen

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATUR
.30 . M.	*Biol. 5a Biol. 21 *Chem. 1a Chem. 5a Chem. 22a Educ. 14 Eng. 16 *Geol. 1 *Greek 9 Hist. 15 *Math. 1-Sec. i Phil. 3a Pol. Sc. 11a	Chem. 10a *Eng. 1-Sec. ii Eng. 2a *French 1-Sec. ii French 26 Geol. 9 *Ger. 1-Sec. i *Hist. 29 *Lat.1-Sec. i *Math. 1-Sec. ii *Phys. 2a-Sec. i Pol. Sc. 6a	*Biol. 5a Biol. 21 *Chem. 1a Chem. 5a Chem. 22a Educ. 14 Eng. 16 *Geol. 1 *Greek 9 Hist. 15 *Math. 1-Sec. i Phil. 3a Pol. Sc. 11a	Chem. 10a *Eng. 1-Sec. ii Eng. 2a *French 1-Sec. ii French 26 Geol. 9 *Ger. 1-Sec. i *Hist. 29 *Lat. 1-Sec. i *Math. 1-Sec. ii *Phys. 2a-Sec. i Pol. Sc. 6a	*Biol. 5a *Chem. 1a Chem. 5a Educ. 16 Eng. 16 *Geol. 1 *Greek 9 Hist. 15 *Math. 1-Sec. i Phil. 3a Pol. Sc. 11a	*Eng. 1-S *French Geol. 14 Geol. 19 *Ger. 1-S *Lat. 1-Se *Math. 1- Phys. 11
.30 .. M.	*Biol. 1a Biol. 21 Chem. 22a Educ. 2 *Eng. 1-Sec. i *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec. ii Geol. 2 *Ger. 2-Sec. i *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. iii Math. 2-Sec. i Math. 15 Phil. 2a Psy. 8a Soc. Sc. 15	*Biol. 2a-Sec. iii Econ. 15a *Eng. 3 Eng. 10 *French 2-Sec. iii French 4 *Geol. 1-Sec. ii Geol. 2 *Ger. 21 Lat. 2-Sec. i *Math. 1-Sec. iv *Phys. 2a-Sec. i Soc. Sc. 5	*Biol. 1a Biol. 21 Chem. 22a Educ. 2 *Eng. 1-Sec. i *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec. ii Geol. 2 *Ger. 2-Sec. 1 *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. iii Math. 2-Sec. i Math. 15 Phil. 2a Psy. 8a Soc. Sc. 15	*Biol. 2a-Sec. iii Econ. 15a *Eng. 3 Eng. 10 *French 2-Sec. iii French 4 *Geol. 1-Sec. ii *Ger. 21 Hist. 28 Lat. 2-Sec. i *Math. 1-Sec. iv *Phys. 2a-Sec. i Soc. Sc. 5	*Biol. 1a Educ. 2 *Eng. 1-Sec. i *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec. ii *Ger. 2-Sec. i *Ger. 4-Sec. ii Ger. 5 *Greek 1 *Hist. 1 Lat. 2-Sec. ii *Math. 1-Sec. iii Math. 2-Sec. i Math. 15 Phil. 2a Psy. 8a	Eng. 10 Eng. 29 *French 2 Geol. 14 Geol. 19 Hist. 36 Lat. 2-S *Math. 1- Math. 3 Phil. 11 Phys. 11
).30 .. M.	Biol. 21 Chem. 22a Educ. 1 *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 *French 11 *Ger. 2-Sec. ii *Ger. 4-Sec. i *Greek 2 Greek 3 Greek 11 Hist. 3 *Lat. 1-Sec. ii *Lat. 1-Sec. iii Math. 2-Sec. ii Math. 5-Sec. i Phil. 5a-Sec. i Pol. Sc. 1 Soc. Sc. 7 *Span. 6	*Biol. 2a-Sec. iii Eng. 25-Sec. i Eng. 14 *Geol. 1-Sec. ii *Ger. 3 Greek 13 Hist. 25 Lat. 6 Math. 5-Sec. i *Phys. Ed. 1-Sec. i (Men) *Phys. 2a-Sec. i Soc. Sc. 20	Biol. 21 Chem. 22a Educ. 1 *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 *French 11 Geol. 2 *Ger. 2-Sec. ii *Ger. 4-Sec. i Greek 3 Greek 11 Hist. 3 *Lat. 1-Sec. ii *Lat. 1-Sec. iii Math. 2-Sec. ii Phil. 5a-Sec. i Pol. Sc. 1 Soc. Sc. 7 *Span. 6	*Biol. 2a-Sec. iii Eng. 14 Eng. 25-Sec. i *Geol. 1-Sec. ii *Ger. 3 Greek 8 Hist. 25 Hist. 28 Math. 5-Sec. i *Phys. Ed. 1-Sec. i (Men) *Phys. 2a-Sec. i Soc. Sc. 20	Educ. 1 *Eng. 1-Sec. iii *Eng. 1-Sec. iv Eng. 4 *French 11 *Ger. 2-Sec. ii *Ger. 4-Sec. i Greek 3 Greek 11 Hist. 3 *Lat. 1-Sec. ii *Lat. 1-Sec. iii Math. 2-Sec. ii Math. 5-Sec. i Phil. 5a-Sec.i Pol. Sc. 1 *Span. 6	Eng. 14 Eng. 29 French Geol. 14 Geol. 16 Geol. 19 Ger. 30 Hist. 39 Math. 3 Phys. 11
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SCHEDULE OF LECTURES, FIRST SEMESTER, 1914-15—Continued

Courses which are starred are open to Freshmen

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 24a Biol.25a *Chem. 2a-Sec. ii Chem. 7 *Eng. 1-Sec. v *Eng. 1-Sec. vi Geol. 9 (Lab.) *Ger. 1-Sec. iii *Hist. 13 Phil. 5a-Sec. ii *Phys. Ed. 1-Sec. i (Women) *Span. 9	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 19a *Chem. 2a-Sec. i Chem. 6 Chem. 17 Eng. 13a Eng. 24 *Geol. 1-Sec. iv Phil. 10 Phys. Ed. 2-Sec. i (Women) *Phys. 2a-Sec. ii Span. 18	*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 25a *Chem. 2a-Sec. ii Chem. 7 *Eng. 1-Sec. v *Eng. 1-Sec. vi French 5 *Ger. 1-Sec. iii *Hist. 13 Phil. 5a-Sec. ii *Phys. Ed. 1-Sec. i (Women) *Phys. 2a-Sec. iv *Span. 9	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 19a *Chem. 2a-Sec. i Chem. 6 Chem. 17 Econ. 11 Eng. 24 *Geol. 1-Sec. iv Phil. 9 Phys. Ed. 2-Sec. i (Women) *Phys. 2a-Sec. ii Span. 18	Chem. 7 Chem. 17 Chem. 22a *Eng. 1-Sec. v *Eng. 1-Sec. vi French 5 *Ger. 1-Sec. iii *Hist. 13 Phil. 5a-Sec. ii Phys. Ed. (Vol.) *Span. 9	
*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 24a Biol. 25a *Chem. 2a-Sec. ii Chem. 7 Eng. 26 *Geol. 1-Sec. i Geol. 9 (Lab.) *Phys. Ed. 1-Sec. ii (Women) Psy. 2a *Span. 14	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 20a *Chem. 2a-Sec. i Chem. 6 Chem. 17 Eng. 13a *Geol. 1-Sec. iii *Geol. 1-Sec. iv Phil. 10 Phys. Ed. 2-Sec. ii (Women) *Phys. 2a-Sec. ii	*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 25a *Chem. 2a-Sec. ii Chem. 7 Eng. 26 *Geol. 1-Sec. i Lat. 5 *Phys. Ed. 1-Sec. ii (Women) *Phys. 2a-Sec. iv Psy. 2a *Span. 14	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 20a *Chem. 2a-Sec. i Chem 6 Chem. 17 Econ. 11 *Geol. 1-Sec. iii *Geol. 1-Sec. iv Phil. 9 Phys. Ed. 2-Sec. ii (Women *Phys. 2a-Sec. ii (Women)	Chem. 7 Chem. 17 Chem. 22a *Phys. Ed. 1 Lec. (Men) *Phys. Ed. 1 Lec. (Women) Psy. 2a *Span. 14	
*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 24a Biol. 25a *Chem. 2a-Sec. ii Chem. 7 *Geol. 1-Sec. i Geol. 9 (Lab.) Greek 7 Psy. 2a	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 20a *Chem. 2a-Sec. 1 Chem. 6 Chem. 17 *Geol. 1-Sec. iii *Geol. 1-Sec. iv *Phys. 2a-Sec. ii	*Biol. 2a-Sec. i *Biol. 6a-Sec. i Biol. 10a Biol. 25a *Chem. 2a-Sec. ii Chem. 7 *Geol. 1-Sec. i Greek 5 *Phys. 2a-Sec. iv Psy. 2a	*Biol. 2a-Sec. ii *Biol. 6a-Sec. ii Biol. 20a *Chem. 2a-Sec. i Chem. 6 Chem. 17 *Geol. 1-Sec. iii *Geol. 1-Sec. iv *Phys. 2a-Sec ii Psy. 14	Chem. 7 Chem. 17 Chem. 22a Greek 6 Psy. 2a	
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Econ. 31 (6.45) French 10 Ger. 8 Math. 35 Pol. Sc. 25	Eng. 20 Eng. 30 (6.45) French 24 Ger. 12	Econ. 31 (6.45) Eng. 19 Geol. 16 Ger. 7 Math. 10a Pol. Sc. 3	Ger. 6 Math. 35 Phil. 22 (6.45)		

HOURS TO BE ARRANGED

Biol. 15 Biol. 23 Biol. 30 Biol. 31 Biol. 40	Chem. 11a Chem. 20 Chem. 21 Chem. 30 Chem. 35a Chem. 41a	Geol. 7 Geol. 8 Geol. 12 Geol. 13 Greek 4 Greek 16	Ital. 16 Lat. 4 Lat. 9 Lat. 10 Lat. 12 Math. 40	Phys. 4 Phys. 7 Phys. 8 Phys. 9 Phys. 28a Psy. 3 Psy. 6a Psy. 9	Soc. Sc. 22 Span. 8

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UNIVERSITY OF CINCINNATI RECORD

SERIES I, VOL. XI APRIL, 1915 No. 2, PART 3

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1915-1916

UNIVERSITY OF ILLINOIS
AUG 1 1915
PRESIDENT'S OFFICE

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

ENTERED AS SECOND-CLASS MATTER MAY 19, 1913, AT THE POST OFFICE AT CINCINNATI, OHIO, UNDER THE ACT OF AUGUST 24, 1912

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TABLE OF CONTENTS

PART I

GENERAL STATEMENT

Calendar, ... 7
Departments of the University, ... 9
Administrative Officers, ... 10
General Information:
- Foundation, ... 11
- Buildings and Site, ... 14
- Benefactors of the University, ... 15
- Endowment Fund Association, ... 15
- Benefactions, ... 16
- University Library, ... 17
- Municipal Reference Bureau, ... 18
- Publications, ... 19
- Museums, ... 19
- Fellowships, Scholarships, and Prizes, ... 20
- Alliance Française, ... 22
- Athletics, ... 23
- Carson Field, ... 23
- Physical Training for Women, ... 23
- Student Organizations 23
- Admission:
  - Special Students, ... 24
  - Students Entering from Other Colleges and Universities, 25
  - Admission to Advanced Standing, ... 25
- Registration, ... 25
- General Regulations, ... 27
- Fees.
  - Tuition, ... 28
  - Special and Irregular Students, ... 29
  - External Courses, ... 29
  - Special Courses for Teachers, ... 29
  - Laboratory Fees, ... 29
  - Graduation Fees, ... 30
  - Breakage Deposits, ... 30
  - Course for Teachers of Art, ... 30
  - Miscellaneous Fees, ... 30
- Expenses, ... 31

PART II

THE GRADUATE SCHOOL

Faculty, ... 32
Admission, ... 33
Instruction, ... 34
Requirements for the Degree of Master of Arts, ... 34
Requirements for the Degree of Doctor of Philosophy, . . 35
Admission to Advanced Standing, ... 36
Special Arrangement for Graduate Students in Lane Seminary and in the Hebrew Union College, ... 36
Fellowships and Scholarships, ... 36

Courses of Instruction:
Anatomy, ... 37
Astronomy, ... 37
Biblical Literature, ... 37
Botany, ... 37
Chemistry, ... 38
Economics, ... 40
Education, ... 40
English, ... 41
Geology and Geography, ... 41
German, ... 42
Greek, ... 43
History, ... 43
Latin, ... 43
Mathematics, ... 44
Mathematics (Applied), ... 44
Pathology and Bacteriology, ... 44
Philosophy, ... 44
Physics, ... 45
Physiology, ... 46
Political and Social Science, ... 46
Psychology, ... 47
Romance Languages, ... 48
Zoology, ... 48

PART III

McMICKEN COLLEGE OF LIBERAL ARTS

Faculty, ... 50
Requirements for Admission, ... 52
Entrance Conditions, ... 53
Entrance Examinations, ... 53
Schedule of Entrance Examinations, ... 54
Definition of Units in Subjects Required for Entrance:
English, ... 55
Latin, ... 58
Greek, French, ... 59
German, ... 61
Spanish, ... 62
Mathematics, ... 62
Physics, ... 64
Chemistry, ... 64
Zoology, ... 65
Botany, ... 66
Botany and Zoology, ... 66
Physical Geography, ... 67
Astronomy, ... 67
History, Civics, ... 68
Economics, ... 68
Commercial Geography, ... 68
Bookkeeping, ... 69
Stenography and Typewriting, ... 69
Commercial Law, ... 70
Drawing, Manual Training, ... 70
Domestic Science, ... 71

Admission on Certificate from Accredited Schools, ... 71
List of Accredited Schools, ... 72-73
List of Recognized Schools, ... 74
Accredited Schools of the North Central Association, . . 74
Requirements for the Bachelor of Arts Degree, ... 74
Outline of Studies in the College of Liberal Arts, . . . 76-78
Advisory System for the Election of Studies, ... 78
Special Arrangements:
Credit for Work Done in the College of Law, ... 79
Six-Year Combined Collegiate and Medical Course, . . . 79
Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary, ... 79
Credit for Work Done in the Art Academy of Cincinnati, 79
Credit for Work Done in the College for Teachers, . . . 80
Special Arrangement with the New York State College of Agriculture of Cornell University, ... 80
Courses of Instruction:
Astronomy, ... 81
Biblical Literature, ... 81
Botany, ... 82
Chemistry, ... 84
Economics, ... 89
Education, ... 92
English, ... 92
Geology and Geography, ... 96
German, ... 98
Greek, ... 102
History, ... 104
Latin, ... 106
Mathematics, ... 107
Philosophy, ... 110
Physical Education, ... 111
Physics, ... 113
Political and Social Science:
Political Science, ... 116
Social Science, ... 118
Psychology, ... 120
Romance Languages:
French, ... 121
Spanish, ... 123
Italian, ... 124
Zoology, ... 124
Six-Year Combined Collegiate and Medical Course, . . . 128
Drawing, Modeling, and Carving, ... 130

PART IV

COLLEGE FOR TEACHERS

Joint Committee, ... 132
Faculty and Staff of Instruction, ... 132
General Regulations, ... 134
The Ohio School Law Governing the Certification of Teachers Without Examination, ... 135
Standards Governing Appointment and Promotion to Positions in the Cincinnati Public Schools, ... 136

Programs Offered:
Program I, ... 139
Program II, ... 140
Program III, ... 141
Program IV, ... 142
Program V, ... 142
Program VI, ... 143
Program VII, ... 143
Program VIII, ... 144
Special Courses for Teachers, ... 145
Appointment Committee, ... 145
Courses of Instruction:
Education, ... 145
Botany, ... 150
English, ... 151
Geology and Geography, ... 151
History, ... 152
Household Arts Education, ... 152
Latin, ... 153
Philosophy, ... 153
Psychology, ... 153
Courses in Kindergarten Training, ... 154
Courses for Teachers of Art, ... 156
Schedule of Lectures, First Semester, 1915-16, ... 158

CALENDAR

1915

Sept. 9, Thursday.	Entrance examinations begin.
Sept. 15, Wednesday.	Entrance examinations end.
Sept. 16, Thursday. Sept. 17, Friday. Sept. 18, Saturday.	Registration days for the College of Liberal Arts and the College for Teachers.
Sept. 20, Monday.	First semester begins for the College of Liberal Arts and the College for Teachers.
Sept. 20, Monday.	First registration day for the Graduate School.
Sept. 25, Saturday.	Last registration day for the Graduate School.
Oct. 2, Saturday.	Examinations for advanced standing in French, German, Greek, and Spanish.
Nov. 20, Saturday.	Mid-term reports due in the Registrar's office.
Nov. 25, Thursday.	Thanksgiving Day: a holiday. Recess of three days.

Recess from December 20, 1915, to January 1, 1916, Inclusive

1916

Jan. 3, Monday.	Classes resumed. Entrance examinations begin.
Jan. 8, Saturday.	Entrance examinations end.
Jan. 24, Monday.	First semester examinations begin.
Feb. 3, Thursday.	First semester examinations end.
Feb. 4, Friday.	Registration day for the second semester of the College of Liberal Arts and of the College for Teachers.
Feb. 5, Saturday.	No classes.
Feb. 7, Monday.	Second semester begins for the College of Liberal Arts and the College for Teachers.
Feb. 7, Monday. Feb. 8, Tuesday. Feb. 9, Wednesday.	Registration days for the second semester of the Graduate School.
Feb. 19, Saturday.	Examinations for advanced standing in French, German, Greek, and Spanish.

FEB. 22, TUESDAY.	Washington's Birthday: a holiday.
APRIL 1, SATURDAY.	Mid-term reports due in the Registrar's office.
MAY 5, FRIDAY.	Oratorical contest for Jones Prizes.
MAY 30, TUESDAY.	Memorial Day: a holiday.
JUNE 9, FRIDAY.	Second semester ends.
JUNE 10, SATURDAY.	University Commencement Day.
JUNE 12, MONDAY.	Entrance examinations begin.
JUNE 17, SATURDAY.	Entrance examinations end.

DEPARTMENTS OF THE UNIVERSITY

The University comprises the following departments:

GRADUATE SCHOOL,

McMICKEN COLLEGE OF LIBERAL ARTS,

COLLEGE FOR TEACHERS,

COLLEGE OF ENGINEERING: Departments of Chemical, Civil, Electrical, Mechanical, and Metallurgical Engineering,

COLLEGE OF MEDICINE (The Ohio-Miami Medical College and the Clinical and Pathological School of the Cincinnati Hospital),

COLLEGE OF COMMERCE,

SCHOOL OF HOUSEHOLD ARTS.

For special announcements of the various departments, except the Medical College, and for further information, address:

THE SECRETARY OF THE UNIVERSITY
CINCINNATI, OHIO

For special announcement of the Medical College, address:

THE DEAN OF THE COLLEGE OF MEDICINE
CLIFTON AVE., CINCINNATI, OHIO

ADMINISTRATIVE OFFICERS

OF

THE GRADUATE SCHOOL, THE COLLEGE OF LIBERAL ARTS, AND THE COLLEGE FOR TEACHERS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.
Office, 10 McMicken Hall.

FRANK W. CHANDLER, Ph. D., Dean of the College of Liberal Arts.
Office, 8 McMicken Hall.

JOSEPH E. HARRY, Ph. D., ... Dean of the Graduate School.
Office, 4 McMicken Hall.

WILLIAM P. BURRIS, A. M., L. H. D., Dean of the College for Teachers.
Office, 2 McMicken Hall.

FREDERICK C. HICKS, Ph. D., Dean of the College of Commerce and Supervisor of the Evening Academic Courses.
Office, 33 McMicken Hall.

EMILIE WATTS MCVEA, A. M., ... Dean of Women.
Office, 12 McMicken Hall.

JERMAIN G. PORTER, Ph. D., ... Director of the Observatory.
The Observatory, Mt. Lookout.

HENRY S. WEST, Ph. D., ... Director of School Affiliation.
Office, 2 McMicken Hall.

ALFRED BRODBECK, ... Director of Physical Education.
Gymnasium Building.

DANIEL LAURENCE, B. S., ... Secretary of the University.
Office, 5 McMicken Hall.

CHARLES ALBERT READ, A. B., Librarian of the University Library.
Van Wormer Library Building.

LELIA G. HARTMANN, B. L., ... Registrar.
Office, 7 McMicken Hall.

ALMA DIECKMAN, ... Assistant Registrar.
Office, 7 McMicken Hall.

GENERAL INFORMATION

FOUNDATION

On his death, in 1858, Charles McMicken gave to the city of Cincinnati by will almost the whole of his estate, valued at about $1,000,000, for the purpose of establishing and maintaining "two colleges for the education of white boys and girls."

He had "long cherished the desire to found an institution where white boys and girls might be taught not only a knowledge of their duties to their Creator and their fellow men, but also receive the benefit of a sound, thorough and practical English education, and such as might fit them for the active duties of life, as well as instruction in the higher branches of knowledge, except denominational theology, to the extent that the same are now or may hereafter be taught in any of the secular colleges or universities of the highest grade in the country."

Nearly half of the property devised by Mr. McMicken was situated in the state of Louisiana. This was entirely lost, in 1860, by a decision of the Supreme Court of that state, annulling that part of the devise. The court refused to recognize the validity of bequests of real estate to institutions controlled by non-resident trustees upon perpetual trusts. The remainder of the property, lying in Cincinnati and its vicinity, did not yield a sufficient income to warrant the establishment of the proposed colleges. For ten years, therefore, the revenue derived from the estate was applied to its improvement.

In 1869, the trustees provided for a School of Design, which they maintained, with aid from Joseph Longworth, until 1884, when they transferred it to the Cincinnati Museum Association. Meanwhile, an attempt was made to unite the various educational trusts in Cincinnati. To this end, in 1870, the General Assembly of Ohio passed an act "to aid and promote education," under which, almost a year later, the University of Cincinnati was established. Bonds were soon issued by the city to provide funds for the erection of a suitable building, which was ready for use in the fall of 1875. But students were received in 1873, and instruction was given temporarily by the teachers of Woodward High School. In 1874, the Academic Department, now known as the McMicken College of Liberal Arts, was organized by the appointment of three professors and two instructors, who met classes during that year in a school building on Franklin street.

The effort to unite other trust funds with those given by Charles McMicken having failed, the income remained long inadequate to the needs of such an institution as he had intended to found. At length the city undertook to support the University in part by public

taxation, the tax for this purpose being limited at first to three-tenths of one mill. In 1906 the General Assembly of Ohio authorized the levying of an increased municipal tax for the University—five-tenths of a mill, instead of three-tenths as heretofore.

In 1913 a law was passed providing that the levy for University and Observatory purposes shall not be "subject to any limitations of rates of taxation or maximum rates provided by law" except the maximum of five-tenths of a mill for the University and three-tenths of a mill for the Observatory, and the "further exception that the combined maximum rate for all taxes levied in a year in any city or taxing district shall not exceed fifteen mills." This law further provides that the levy shall include the amount necessary to pay interest on and sinking fund for all bonds issued for the University subsequent to June 1, 1910. The situation produced by the Smith one per cent tax law, under the provisions of which the income of the University was limited to the amount received in the year 1910, made this law necessary.

In the course of time additional funds for the maintenance of the institution were provided by individual citizens, the most important being the bequest of property, valued at $130,000, by Matthew Thoms in 1890, the gift of $100,000 by David Sinton in 1899, and the recent bequest of Mary P. and Eliza O. Ropes, of Salem, Massachusetts, amounting to $100,000, for the endowment of a chair of Comparative Literature, as a memorial to their father, Nathaniel Ropes, for many years a citizen of Cincinnati. Then, in 1910, the friends of Dr. Joseph Eichberg, for many years an eminent Professor of Physiology in the Miami Medical College, who lost his life through a lamentable accident in the summer of 1908, presented the University with the sum of $45,000, to establish in the University the Joseph Eichberg Chair of Physiology. In 1911, Dr. Francis Brunning bequeathed his entire estate, with the exception of a few minor bequests, to the Endowment Fund Association of the University of Cincinnati, for the College of Medicine. This estate has yielded about $80,000. In 1912, Mrs. Floris A. Sackett made a bequest to the University, which amounts to the income on $30,000. This money has been set aside to endow the "Floris Armstrong Sackett Chair of Domestic Arts." In the same year, Mrs. Frances W. Gibson bequeathed to the University the sum of $31,500. This money has been used to establish the "Thomas Gibson Medical Endowment Fund."

In 1912, Mr. Harry Levy presented to the Board of Directors of the University of Cincinnati for the Endowment Fund of the College of Medicine, the sum of $50,000, to be known as "The Julie Fries Levy Endowment." Mr. Levy made this gift in honor of his mother

and wishes the income used in furthering and disseminating medical knowledge.

In 1913, Mrs. Mary M. Emery presented to the Endowment Fund Association of the University of Cincinnati, the sum of $125,000, to be used to endow the Chair of Pathology in the College of Medicine.

In 1913, Mrs. Henrietta Moos bequeathed $25,000 to the Endowment Fund of the University of Cincinnati for the College of Medicine, as a memorial to her husband, Herman M. Moos. This fund is called the "Herman M. Moos Memorial Fund," and has been used to establish the Moos scholarship for research in internal medicine, to support a technical laboratory assistant, and to provide laboratory equipment in the Department of Medicine.

New departments were also added. In 1872, the Cincinnati Astronomical Society (founded in 1842) transferred its property on Mt. Adams to the city, which agreed, as a condition of the gift, to sustain, in connection with the University, on a new site provided by John Kilgour, an Observatory,* to be built with funds given by him. In 1896, the Medical College of Ohio (founded in 1819) became the College of Medicine of the University, though still retaining its original title conjointly with its new one. In 1908, an invitation was extended to the Miami Medical College to become a department of the University. In accordance with this invitation the Miami Medical College and the Medical College of Ohio (the College of Medicine of the University) have recently been united into a single medical department, known as "The Ohio-Miami Medical College of the University of Cincinnati."

Out of a professorship of Civil Engineering in the College of Liberal Arts has developed the College of Engineering. It was organized under that name in 1900, and became a distinct department in 1904.

Since its organization, in 1887, the Clinical and Pathological School of the Cincinnati Hospital has been affiliated with the University, being designated as the Medical Department, until 1896, and afterwards as the Department of Clinical Medicine.

The College for Teachers was organized in 1905, in co-operation with the Board of Education of the city of Cincinnati.

In 1906 the Graduate School was separated from the McMicken College of Liberal Arts and a distinct organization with a dean at its head effected.

In 1912 the College of Commerce was organized for the purpose of providing opportunity for higher commercial education.

Evening Classes in the College of Liberal Arts were opened in

* For this purpose the city levies annually a special tax of one-twentieth of one mill.

1912 in order that those persons whose occupations prevented them attending the day classes might have an opportunity to take college courses at night.

In 1912 a Bureau of City Tests was established in the Engineering College in connection with the Engineer's office of the Department of Public Service of the city. It will make all the tests of materials and supplies required by this and other city departments. A technical chemist has been employed to direct this work, and, as far as possible, it will be utilized to train students in the methods of such tests. It is hoped in this way to develop a course in municipal engineering.

The School of Household Arts was established in 1908 under the auspices of the Cincinnati Kindergarten Association; on July 1, 1914, it became a part of the University of Cincinnati. The School aims to give scientific instruction in the fundamental principles and practices of activities growing out of private and institutional housekeeping, with a view to increasing the efficiency of those desiring to enter a vocation or engage in a business dependent upon a knowledge of such subjects.

BUILDINGS AND SITE

From 1875 to 1895, the Academic Department occupied the building erected on the grounds of the McMicken homestead, as required by the will of the founder. This site proving altogether unsatisfactory, application was made to the courts for permission to remove to a more suitable location in Burnet Woods Park. The desired permission having been granted by the court of last resort in March, 1893, steps were immediately taken for the construction of a main building, called McMicken Hall, which was completed in two years. This building stands on high ground at the southern end of the park, forty-three acres having been set apart as a site for the University. During 1895-96, the north wing, known as Hanna Hall, was built for the Departments of Chemistry and Engineering, with funds amounting to about $70,000, provided by Henry Hanna. The south wing, called Cunningham Hall, was built in 1898-99 by Briggs S. Cunningham, at a cost of $60,000. This wing is occupied by the Departments of Physics, Botany, and Zoology. The Van Wormer Library, costing about $60,000, the gift of Asa Van Wormer, was built during 1898-1900. The Observatory, built in 1873 with $10,000 given by John Kilgour, stands on Mt. Lookout, at a distance of several miles from the other University buildings. A smaller structure, the O. M. Mitchel Building, was added in 1904 to house the old telescope. In 1912 this building was enlarged by the addition of a lecture room, a library, and another small dome. Since 1896,

the building on the McMicken homestead site has been used by the College of Medicine. A Dispensary, erected in that year, is situated on the lower part of the grounds. A gymnasium, power plant, and engineering building, provided by the city, at a cost of $550,000, were completed in December, 1911.

A bond issue of $550,000 has been authorized to provide for the construction of a chemical laboratory, a woman's building, a stadium, and for making extensive repairs in McMicken Hall. These bonds have been sold, and the plans for the new buildings will soon be ready.

BENEFACTORS OF THE UNIVERSITY

Besides those whose names have already been mentioned, the following persons have contributed to the endowment or to the equipment of the University: William A. Proctor, Samuel J. Browne, William J. Odell, Julius Dexter, Frank J. Jones, Moses F. Wilson, Eugene F. Bliss, James T. Whittaker, Mrs. William E. Merrill, Theodore A. Bruehl, Andrew Hickenlooper, Christian Moerlein, Laura Seasongood, Lewis Seasongood, S. Lilienthal, Mrs. Nannie Fechheimer, A. G. Wetherby, Charles F. Windisch, C. T. Webber, P. Robertson, the Lane & Bodley Company, James E. Mooney, John Kilgour, Chas. Kilgour, C. H. Krippendorf, Julius Fleischmann, Lucien Wulsin, Samuel Pogue, Edward Miles Brown, Nathaniel Pendleton Dandridge, Mrs. Howard Breen, Robert William Hochstetter, Mrs. R. N. Hollingshed, Davis L. James, Catherine M. James, Ellen W. James, Annie A. James, Mr. and Mrs. O. J. Renner, Mrs. Antonia Wendte, Mary E. Dandridge, Mrs. Joseph Eichberg, the alumni of the University, Harry M. Levy, J. G. Schmidlapp, the Class of 1907, the estate of John B. Peaslee, Alice L. Kuhn, Dr. Louis Grossman, Mrs. A. A. Long, Mr. Max Senior, Mr. John Bowers, of New York City, and Mrs. A. Howard Hinkle.

ENDOWMENT FUND ASSOCIATION

The Endowment Fund Association of the University of Cincinnati was incorporated on April 21, 1905, by a number of prominent citizens of the municipality. The purpose of the corporation, as stated in its Code of Regulations, is "to secure property, including money, or the income from the same, for the use of the University of Cincinnati, and for that purpose to solicit, collect, accept, hold, manage, invest, or pay over such property, money, or income, whether such property, money, or income arises by way of gift, devise, or purchase, for the benefit of said University." Its affairs are managed by a Board of Trustees consisting of nine members. The officers of the Endowment Fund Association are:

Rufus B. Smith, President
Jacob G. Schmidlapp, Vice-President
Charles F. Windisch, Treasurer
Howard C. Hollister, Secretary

BENEFACTIONS

For the guidance of those who may wish, during life or by bequest, to make benefactions to the University, the following information is given:

FORM OF BEQUEST TO THE UNIVERSITY OF CINCINNATI:—

I bequeath and devise to the City of Cincinnati as Trustee for the University of Cincinnati, to hold in trust forever for said University, the following property:.....

FORM OF BEQUEST TO THE ENDOWMENT FUND ASSOCIATION:—

I bequeath and devise to the Endowment Fund Association of the University of Cincinnati, for the use of the University of Cincinnati, the following property:.....

The sum of one hundred and fifty thousand dollars would erect a section of a Natural History Museum.

The sum of one hundred thousand dollars is the amount necessary to found a full professorship in any one of the departments. The donor has the privilege of naming the professorship.

Fifty thousand dollars would be required for a dormitory, and the contributor of such a sum would be privileged to name the building. There is nothing which the University needs more than a dormitory system.

Twenty thousand dollars endows an instructorship in a department. The donor has the right to name it.

Ten thousand dollars is the principal required to establish a fellowship in any one of the departments; the income being paid to the Fellow, who devotes his time to original research combined with a little teaching.

Three thousand dollars endows a free scholarship, the income from this sum remitting all fees and giving the donor the right during life to nominate to the scholarship, subject to the rules of the University.

The President of the University would be glad to give full information upon any question relating to foundation to any person or persons who may desire more detailed knowledge.

THE UNIVERSITY LIBRARY

The Van Wormer Library Building is of stone, fire-proof throughout, and is built in accordance with the most approved modern plans of library construction. The library is open from 8 A. M. to 9:30 P. M., on Monday to Friday; Saturday, 8 A. M. to 5 P. M.

The University Library, in this building, contains about 72,000 volumes and 10,000 pamphlets. In the Reference Room about 2,000 volumes are arranged on open shelves, to which the students have free access. The Periodical Room contains the current numbers of 400 periodicals. The library is provided with a card catalogue of its own books, and also with a card catalogue of the books (non-fiction) received since 1905, by the Public Library of Cincinnati.

The Library contains some valuable special collections:

The Robert Clarke Library, comprising 6,761 volumes, was given by William A. Procter. This collection is especially rich in Americana, and contains some rare first editions.

The Enoch T. Carson Shakespeare Library, 1,420 volumes, was also given by William A. Procter.

The Bruehl Library, of about 2,000 volumes, contains many rare and valuable works on the history, archæology, and ethnology of Mexico and Central America. This collection was made by Dr. Gustav Bruehl, and presented to the Library by his son, Mr. Theodore A. Bruehl.

The Wilson Library, consisting of works of English, French, and Italian literature, 810 volumes, was given by Judge Moses F. Wilson.

The Merrill Library of engineering works, 876 volumes, 478 pamphlets, and 185 maps, charts, and photo-lithographs, was given by Mrs. William E. Merrill.

The Whittaker Medical Library, the bequest of Dr. James T. Whittaker to the Medical College of Ohio, comprises 1,547 volumes and 538 pamphlets.

The Thoms Library, miscellaneous works, was part of the bequest of the late Matthew Thoms.

The Brown Philological Library, containing the English philological library of the late Professor Edward Miles Brown, was presented to the University by Mrs. Edward Miles Brown. It consists of 318 bound volumes, 51 unbound volumes, and 83 pamphlets.

The Charlotte Hillebrand Memorial Library consists of French and German books, at present about 1,500 volumes, purchased from the proceeds of an endowment recently established in memory of the late Charlotte Hillebrand.

The library has many volumes on history and economics, purchased from the proceeds of an endowment provided in 1894 by the will of Laura Seasongood.

The Library of the American Association for the Advancement of Science has been placed under the charge of the University of Cincinnati, by the terms of an agreement with the Association, entered into on September 14, 1895. This collection consists at present of 6,000 volumes, for the most part periodical publications of foreign scientific societies.

The Historical and Philosophical Society of Ohio has space for its valuable collection of books, pamphlets, and other articles in the Van Wormer Library. This collection comprises over 25,400 volumes and 69,000 pamphlets, pertaining chiefly to the history of the Ohio Valley, and contains valuable collections of original letters and other manuscripts. Students of the University have access to this library and may withdraw books from it under certain conditions.

The total number of books, including duplicates, in the Van Wormer Library Building is about 103,000 volumes and 79,000 pamphlets.

To these collections must be added the libraries of departments of the University, situated in other parts of the city. These are:

The Library of the Observatory	4,000 volumes
The Library of the College of Medicine	3,200 volumes
The Library of the Municipal Reference Bureau	400 volumes and 5,000 pamphlets
Total	7,600 volumes and 5,000 pamphlets

The libraries of the University, excluding those of the Historical and Philosophical Society of Ohio and the American Association for the Advancement of Science, contain 79,600 volumes and 15,000 pamphlets.

The Public Library, 458,876 volumes; the Mercantile Library, containing about 84,264 books; and the Lloyd Library and Museum, consisting chiefly of scientific works, as well as those of the Lane Theological Seminary, the Hebrew Union College, the Art Museum and the College of Music, are open to University students.

MUNICIPAL REFERENCE BUREAU

The Municipal Reference Bureau was organized in 1913 under the Department of Political Science of the College of Liberal Arts. Its quarters in the City Hall are adjacent to the Council Chamber and the rooms of the Board of Education. The library of this Bureau contains material relating to all phases of city government and municipal activities. This Bureau is primarily for the use of Council and the administrative officers of the city, but is available to the general public and students as well. Through this agency,

students in political and social science are enabled to familiarize themselves more intimately with the actual operation of both the city government and the organizations and institutions working for political and social betterment.

PUBLICATIONS

The official publications of the University are as follows:

THE UNIVERSITY RECORD. This publication is issued at intervals during the year and comprises the President's Annual Report, the Annual Catalogue, and Announcements of the Graduate School, College of Liberal Arts, College for Teachers, College of Engineering, College of Medicine, College of Commerce, and School of Household Arts.

THE UNIVERSITY STUDIES. This publication is issued in parts and contains the results of research by members of the faculty or by other persons connected with the University of Cincinnati. A price list of the different numbers of this publication may be obtained by addressing the office of the Press.

Student publications of the University are as follows:

THE CINCINNATIAN. The Cincinnatian is the University Annual, and is edited and published by the members of the Junior Class.

THE UNIVERSITY WEEKLY NEWS. This paper is the official student bulletin, and is issued every week during the University year by a student board of editors.

THE SCRIBE. This magazine appears once a month and is literary in tone. The students of the University are the contributors.

MUSEUMS

The Museum of Natural History consists of a number of geological and biological collections. Among others are specimens donated from the Zoological Garden from time to time, the Balke natural history collections, chiefly of mammals, birds and insects, the Huntington collection of shells, the Fillmore and Schneider collection of Philippine relics; the Fechheimer collection of igneous rocks; the Wetherby collection of rocks and minerals; and lastly, a series of specimens illustrating the chemical industries. The Department of Geology and Geography has also on exhibition a part of its working collections of maps, models, minerals, rocks, and fossils. Other valuable collections are the U. P. James collection of fossils and minerals, the Carl Holmes collection of Greenland birds, permanently loaned by Dr. and Mrs. C. R. Holmes; donations by Mr. E. Meyer and Dr. Arch I. Carson; and several group mounts of large animals.

In 1912 the heirs of the late Samuel A. Miller loaned to the University his large collection of fossils (more than 8,000 labels), gathered from various parts of America and Europe. In return for the use of this collection for educational purposes, the University has provided for its exhibition in specially adapted show-cases in a large well-lighted room devoted especially to that purpose. The collection is for sale and is open at all times for inspection by prospective buyers. Inquiries from prospective purchasers will be transmitted promptly to the owners. It is earnestly hoped that some friend may purchase it for this institution. The University has also on loan and similarly exhibited the H. M. Norris collection of Indian implements.

The Greek Room contains reproductions of the most noted works of Greek art. There were added to this collection recently a cast of the "Winged Victory," "Aphrodite of Melos," "Faun Playing the Flute," "Esquiline Venus," "Capitoline Venus," and a pediment of the temple of Zeus at Olympia. Two additional statues (Minerva Giustiniani and the Lateran Sophocles) have been installed in the main corridor of McMicken Hall. These, together with the large carbon pictures of the Parthenon, Erechtheum, Acropolis, Corinth, and Paestum in the same hall, form a valuable adjunct to the collection of casts in the Art room.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

THE GRADUATE SCHOOL

The D. A. R. Fellowship in American History. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

The Hanna Fellowship in Physics. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

The Alliance Française Scholarship, of $300, was established in 1904 by the Alliance Française of the City of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

The Armstrong-Hunter Memorial Fund, valued at $1,000, was established in 1910 in memory of Miss Sarah J. Armstrong and Miss Clara Hunter, by eighty of their former pupils. This fund will be used to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

In addition to the above, the University offers ten scholarships in several departments which exempt their holders from the payment of tuition fees.

THE McMICKEN COLLEGE OF LIBERAL ARTS

THE CORNELIUS GEORGE COMEGYS SCHOLARSHIP, with an income of fifty dollars, was founded in 1899 by the Old Endowment Fund Association, which was composed of the alumni of the University. This scholarship is awarded annually to a meritorious undergraduate.

THE McMICKEN HONORARY SCHOLARSHIPS are awarded annually to the five Juniors who have the best scholastic standing, according to the records in the Registrar's office.

THE THOMS HONORARY SCHOLARSHIPS are awarded annually to the six Sophomores and the six Freshmen who have the best scholastic records.

THE JULIUS FLEISCHMANN SCHOLARSHIPS. Thirteen scholarships of $75 each, offered for the years 1909-10, 1910-11, 1911-12, 1912-13, 1913-14, 1914-15, and 1915-16, by ex-Mayor Julius Fleischmann. They cover the first year's tuition, in the College of Liberal Arts, of thirteen non-residents, who are members of the graduating classes of the accredited schools outside of Cincinnati.

THE JONES PRIZES. The first Jones Prize of forty dollars was founded in 1892 by the Honorable Frank J. Jones, and is awarded annually to that member of the Senior class in the College of Liberal Arts who writes and pronounces the best English oration. The subjects are chosen by the Dean and the Chairman of the Board of Directors. A committee consisting of three citizens of Cincinnati is appointed by the Chairman of the Board of Directors to judge the contest. The second Jones Prize of twenty dollars was founded by Mr. Jones in 1901. It is awarded to that member of the Senior class whose oration is judged by the committee to be second in merit. These prizes are permanently endowed.

THE EDWARD MILES BROWN PRIZE FOR EXCELLENCE IN ENGLISH. This prize of fifty dollars was established in 1908, by a provision of the will of the late Professor Edward Miles Brown. It is awarded annually to that member of the Senior class who has attained the highest excellence in English during his four years' undergraduate course.

THE HENRY HOCHSTETTER PRIZE IN CHEMISTRY. This prize was established in 1909 by Mr. Robert Hochstetter, of the Class of 1895, in memory of his brother, Henry Hochstetter. It is to be awarded annually for the best graduating thesis in Chemistry, and is open to both students of Liberal Arts and Engineering. The successful candidate is nominated by a committee consisting of the head of the Department of Chemistry and two members of the Cincinnati Section of the American Chemical Society.

THE ROBERT PATTERSON McKIBBIN MEMORIAL PRIZE, a gold medal of the value of twenty-five dollars, was established in 1911 by

the Reverend William McKibbin and family, in memory of their son Robert Patterson McKibbin, who died in 1910, while a member of the Junior class of this University. This prize aims to hold up before the male students of the University the ideals of manhood. It will be awarded to that young man of the Senior class who, in the judgment of the faculty, is the best embodiment of these ideals.

The Cincinnati Prize. This prize, of the value of $20, was established in 1912 by the National Municipal League. It is awarded to that student in the University who submits the best original essay dealing with the municipal government or the civic life of Cincinnati.

The Union Bethel Scholarships in Social Science. Four scholarships of $50 each, offered for the years 1913-14, 1914-15, by Mr. J. O. White, resident director of the Union Bethel Settlement. These scholarships are awarded to four advanced students in the Department of Social Science who carry on sociological investigations at the Union Bethel.

The Cincinnati Law School Scholarship. A scholarship open to Seniors who intend to enter the Cincinnati Law School the year after graduation.

The Taft Scholarship This scholarship of $75 was established in May, 1914, with the proceeds of the sale of the press equipment, which was originally donated by Mr. Charles P. Taft. It is awarded to a worthy student selected by the President of the University.

For the fellowships, scholarships, and prizes of the various colleges, consult their several announcements.

THE ALLIANCE FRANÇAISE

The Alliance Française, a national association, officially recognized by a decree of the President of the French Republic, October 23, 1886, aims to promote the study of the French language and literature in foreign lands.

The Cincinnati branch of the Alliance Française, in co-operation with the University of Cincinnati, has arranged for a number of lectures to be given during the year by some of the most eminent French writers of the day. To these lectures students of the University of Cincinnati are admitted by season tickets free of charge.

In 1904 the Alliance Française of Cincinnati established a Scholarship of three hundred dollars in the University, to be awarded to the student showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

ATHLETICS

Athletics are so controlled in the University that they play an important part in the college life of the student without seriously interfering with his interest in class-room work.

All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: three hours per week for all members of the Freshman class, and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A large part of the work is done out of doors during good weather, and such games as football, baseball, basket ball, tennis and track athletics are a part of the students' training. Lessons in boxing, wrestling, and fencing are also given to students interested in this form of exercise.

All athletics and gymnastics are in charge of the Director of Physical Education and his assistants.

CARSON FIELD

An Athletic Field has recently been provided, which is one of the best college athletic fields in the country. It contains a baseball diamond, a football gridiron, and a quarter-mile cinder track, with a one hundred and twenty-four straight-away extending in front of the new grand stand. The proximity of this field to the gymnasium makes it a particularly valuable addition to the athletic equipment of the University. Its location between three hilltops, which form a natural amphitheater, affords opportunity for thousands of people to view the games.

The new gymnasium with its modern equipment—cork-covered running track, white-tiled swimming pool, and spacious locker rooms—is the most complete institution of its kind in the West.

PHYSICAL TRAINING FOR WOMEN

A special instructor has charge of the work in Physical Training for young women, which is required during the Freshman and Sophomore years. The work in the gymnasium is supplemented during the fall and spring with outdoors games.

STUDENT ORGANIZATIONS

The following student organizations met regularly throughout the academic year, 1914-15.

The Academic Club, composed of the men of the College of Liberal Arts; The Athletic Council; Blue Hydra, a permanent organization devoted to the study of Biology; The Chemical Engineer's

Club; The Chemist's Club; The Co-op Club; The Debating Council; The Dramatic Club; The French Club; The Freshman Girl's Club; The German Club; The History Club; The Junior Girl's Club; The Literary Society; Menorah Society (a branch of the Intercollegiate Menorah Association); Men's Glee and Mandolin Clubs; Men's Pan Hellenic Association; The Phrenecon Society; The Senior Girl's Club; The Sophomore Girl's Club; The Speaker's Club, an oratorical and debating society composed entirely of young men; The Student Section of the American Society of Mechanical Engineers; The Student Section of the American Institute of Electrical Engineers; The University Club, composed of representatives from the student clubs, the fraternities, and the four classes; Women's Glee Club; Women's Pan Hellenic Association; a chapter of the Y. W. C. A.; The Civics Club.

The Woman Student's League is an organization open to all women students of the University and to the women of the faculty. Regular meetings are held, at which lecturers of note address the members on subjects connected with the general and economic interests of women.

A Student Tribunal for Self-Government exists in the College of Engineering. It consists of five members—three Seniors and two Juniors.

Membership in the Three Arts Club of Cincinnati is open to women students in the College of Liberal Arts. This organization promotes good fellowship, provides social and artistic opportunities, and holds weekly meetings. Annual dues are fifty cents. Board may be obtained at the club house, 2027 Auburn Ave., for six dollars a week. Applications should be made to Mrs. C. H. Davidson, Auburn Hotel, Mt. Auburn, Cincinnati, O.

ADMISSION

Special Students.—Persons at least twenty years of age and qualified to do University work may be admitted as special students to lectures and laboratory courses in the College of Liberal Arts and in the College for Teachers. They will be required to furnish documentary evidence to the Director of School Affiliation, and to satisfy the heads of the departments concerned, of their ability to carry on successfully the courses which they desire to enter.

Before any special student may become a candidate for a degree he must satisfy the entrance requirements. All special students are amenable to the same regulations as apply to regular students in matters of examination, probation, discipline, etc. (See probation rule, page 27.)

Students Entering from Other Colleges and Universities.—An undergraduate of a college or university desiring to enter the McMicken College of Liberal Arts or the College for Teachers must present to the Director of School Affiliation satisfactory evidence that he has done a sufficient amount of preparatory work to meet the regular entrance requirements, together with a certificate of honorable dismissal from the college or university last attended. He will be given credit for work of university grade in accordance with the provision for "Admission to Advanced Standing."

Admission to Advanced Standing.—Students may be admitted to advanced standing upon presentation of a certificate from a college of approved standing. All applications for advanced standing must be made within three weeks after matriculation to the Director of School Affiliation, and must be accompanied by a statement of the work done, signed by the proper officials of the college from which the applicant comes, and by a marked copy of the catalogue or by a written description in detail of the courses for which advanced credits are desired. In courses where note books or drawings or both are required, these also must be presented. The students applying for advanced standing must first have satisfied the entrance requirements the same as regular students.

Surplus Matriculation Credit

Students who bring from accredited preparatory schools credits in given subjects in excess of the requirements for matriculation, must pass a written examination in the University in the subjects covered by such credits and attain a grade of at least "C" in the same, before the equivalent in university credit may be counted toward the one hundred and twenty-four units required for graduation.

In lieu of such examination for university credit in the above-mentioned matriculation subjects, the faculty may accept as a sufficient evidence of proficiency, a thoroughly satisfactory record (at least "C") in higher work in the same subject, taken in the University.

The preparatory subjects in which university credits may be acquired are French, German, Greek, and Spanish.

The examinations for advanced standing in these subjects will be held on the second Saturday after the opening of each semester.

REGISTRATION

New students will register in 1915 on Thursday and Friday, September 16 and 17; upper classmen on Saturday, September 18. In 1916 they will register on Friday, February 4. Students registering on any other days than those designated above will be required to pay a registration fee of one dollar.

No person will be admitted to any course after the beginning of the semester, unless a good and sufficient excuse for not entering at the opening of the semester be presented to the Dean; and *in no event will any person be permitted to enter the work of any semester after the close of the third week of that semester.* In accordance with this regulation no person will be admitted to the work of the first semester of 1915-16 after October 9, 1915; for the second semester, the last day of admission will be February 26, 1916.

Directions for Registration

Freshmen

1. Take to the Advisory Committee for the Election of Studies the Certificate of Admission received from the Director of School Affiliation, and receive from the Committee a Course Card; after consultation, fill out the Course Card in accordance with the rules and regulations of the Advisory Committee (see page 78);
2. Take the Certificate of Admission, the Registration Blank, and the Course Card to the Registrar;
3. Pay the library fee (also tuition and laboratory fees when such are required) to the Clerk of the Board;
4. Receive from the Clerk of the Board a receipt for matriculation;
5. File the Course Card received from the Advisory Committee in a box prepared for that purpose in the Registrar's office.

Sophomores

Every Sophomore must Register with his own Adviser in accordance with the rules and regulations of the Advisory Committee (see page 78). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Upper Classmen

Every upper classman must fill out his Course Card under the direction of his Advisor (see page 79). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Special Regulations

On the Course Card each course must be designated by the department and the number of the course, especial title, and the number of hours' credit, e. g.:

English 1: Rhetoric and Composition..... 3
Mathematics 1: Algebra, Trigonometry, and
Analytical Geometry 4

In filling out election blanks especial care should be taken to note the advertised hours of courses, in order that conflicts may be avoided.

All students who expect to become teachers should confer with the Dean of the College for Teachers before filling out their Course Cards.

No change will be permitted on the Course Card after the expiration of three days from the last day of registration.

All Course and Schedule Cards must be filled out and deposited in the boxes provided for that purpose before four o'clock on the last registration day.

GENERAL REGULATIONS

Each student shall, at the beginning of the year, leave his local address at the office of the Registrar and shall promptly report all subsequent changes of address.

Unit of Instruction.—The unit of instruction is one hour per week for one semester. Two and one-half hours of actual work in the laboratory, shop, or drafting-room, are considered equivalent to one recitation hour and the preparation therefor. Credit will be given for the number of hours officially published with the course, and for no more. University work not regularly registered is forbidden.

Absences in the College of Liberal Arts.—All absences of students, from any cause whatsoever, are recorded in the Registrar's office. If thirty or more absences are recorded against a student, two extra credits must be made in order to obtain the A. B. degree. No absences are excusable except those incurred by students representing the University in some public exercise outside of the city. Application for these excuses must be made to the Dean in advance.

Probation.—A student in the College of Liberal Arts who receives a grade below "D" in one-half of his work at the mid-term, or at the end of any semester, shall be put upon probation with restricted work for the next half semester of college work. Such probation cannot be removed until the student has obtained a passing grade in all subjects that he is permitted to carry. If a student so probationed fails to secure this passing grade after two successive semestral periods, he shall cease to be a member of the University. Special students, however, who take six hours of work or less, and make a grade below "D" in one-half of their work at the end of the first semester, *may* be allowed to continue without probation until the close of the year.

Readmittance After Suspension.—Students in the College of Liberal Arts suspended for inefficient work during the Freshman year may not return to the University as Freshmen until they have passed the entrance examinations of that year.

GRADES.—The scale of marks for recording grades is as follows: A, 90-100; B, 80-89; C, 70-79; D, 60-69, passed; E, 50-59, conditioned; F, 0-49, failed.

In case a student withdraws from the University during any semester, credit will not be given for any of the work elected for that semester.

HONORABLE DISMISSAL.—It is required as a condition of honorable dismissal, that every student who wishes to withdraw from the University shall submit to the Registrar a written request to that effect.

A copy of the "Rules for the Guidance of Students" may be obtained at the Registrar's office.

FEES

Tuition in the Graduate School, the College of Liberal Arts, and the College for Teachers is free to regular students who are residents of Cincinnati.

All fees must be paid *in advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Deans are authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

TUITION FEES

All regular non-resident students in the College of Liberal Arts and in the College for Teachers, are charged a tuition fee of $75.00 per year, payable in installments of $37.50 per semester. If not paid during registration days, but if paid within the two weeks succeeding the last registration day, the fee is $45.00 per semester. If not paid as above, but if paid within the following two weeks, the fee is $50.00 per semester. If not paid within four weeks after the last registration day, further attendance upon classes will be refused.

Students in the College of Liberal Arts who are residents of the city of Cincinnati, and elect any work whatsoever in the College of Engineering, are charged the full tuition fee of $37.50 per semester.

Tuition in the University Evening Courses is free (a) to all residents of Cincinnati; (b) to all teachers* who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year. Non-residents, other than teachers, are charged tuition at the rate of $3.00 per credit hour per semester. A credit hour is one hour's work a week carried through a semester or half year. Laboratory fees will be charged for courses in the laboratory sciences.

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* Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

Fees for Special and Irregular Students

All special students, and irregular students (i. e., students who have satisfied the entrance requirements, but take less than twelve hours a week by special permission), in the College of Liberal Arts and in the College for Teachers, and all non-resident students in the Graduate School, are charged tuition at the rate of $3.00 per credit hour, per semester, in advance. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to $9.00 a semester, or $18.00 a year. If not paid within one week after the last registration day, an additional fee of $1.00 will be charged. If not paid within four weeks after the last registration day, attendance upon classes will be refused.

External Courses

A fee of five dollars will be charged for admission to *each* External Course.

Special Courses for Teachers*

Teachers enrolled in *Special Courses for Teachers* in the University, pay the regular library fee of $5.00 per year. Tuition in these courses is free (a) to all teachers in public schools who are residents of the city; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $3.00 per course, per year, payable in advance.

The laboratory fee in a teacher's course is $5.00 per year.

Laboratory Fees

All laboratory fees are payable strictly *in advance.*

A student shall not be permitted to enter a laboratory course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Botany, $10.00 per semester.

Chemistry, $15.00 per semester; breakage deposit, $10.00.

Geology, $5.00 per semester; $2.50 per semester for a course having but one laboratory period per week.

Metallurgy, $7.50 per semester.

Physics, $10.00 per semester; $5.00 per semester for a course having but one laboratory period per week.

Psychology, $5.00 per semester.

Zoology, $10.00 per semester.

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* Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

Graduation Fees

All graduation fees must be paid at least two weeks before the day appointed for conferring the degree.

A graduation fee of $5.00 is charged every candidate for an undergraduate degree. A graduation fee of $10.00 is charged a candidate for the degree of master of arts, and a fee of $20.00 is charged for the degree of doctor of philosophy, and for the degree of doctor of medicine.

Breakage Deposits

At the beginning of the year, a breakage deposit of $10.00 will be required of each student who takes chemistry. Five dollars of this amount must be kept permanently upon deposit until all accounts with the Department of Chemistry have been settled. For the remaining $5.00 a coupon ticket will be issued, with which supplies and apparatus may be obtained at the store-room. Should this coupon-ticket become exhausted, the student must purchase a new ticket ($5.00) before supplies will be issued to him at the store-room.

Course for Teachers of Art

The fees in the Special Course for Teachers of Art are as follows: matriculation fee, $5.00; tuition fee for non-residents, $18.00 (for one year's instruction in psychology and the history of education); laboratory fee, $25.00 per year; tuition fee, payable at the Art Academy, $25.00 per year.

Miscellaneous Fees

Gymnasium Fee.—A gymnasium fee of $5.00 per annum ($2.50 per semester) will be charged all men in the College of Liberal Arts, in the College for Teachers, and in the College of Engineering, taking six or more hours of work per week. The same fee will be charged all men in the Graduate School who elect twelve hours of work per week.

A fee of $5.00 per annum ($2.50 per semester) will be charged all other men in the University who desire to avail themselves of the privileges of the gymnasium.

During the temporary use of the men's gymnasium by the classes for women, a gymnasium fee of $1.00 per semester will be charged the women students.

Library Fee.—All students in the Graduate School, in the Colleges of Liberal Arts and Engineering, except fifth year co-operative students, in the College for Teachers, in the College of Commerce, in the Evening Academic courses, and in the School of Household Arts, must pay a library fee of $5.00 per year at the opening of the session.

Late Registration.—Students who apply for registration or submit schedules of study on days other than those designated will be required to pay a fee of $1.00.

Special Examinations.—A fee of $1.00 will be charged for each supplemental examination for the removal of conditions, and this fee must be paid even though the condition is removed without a supplemental examination. A fee of $5.00 will be charged for entrance examinations on days other than those specified in the calendar. Every candidate who applies for the removal of a condition must present to the head of the department in which the condition occurred a receipt showing that the candidate has paid the fee of $1.00, before the said head of department may report the removal of a condition to the Registrar.

EXPENSES

	Graduate School Liberal Arts, or College for Teachers	Engineering	Medicine
Tuition Fees	$75 00	$75 00	$150 00
Library Fees	5 00	5 00	.....
Library and Matriculation Fee, payable each year	.....	.....	$5 00
Gymnasium Fee	5 00	5 00	
Laboratory Fees	*	$35 to $45	.....
Books	$20 to $25	$25 to $30	$45 to $60
Board and Room, per week	$5 to $8	$5 to $8	$5 to $8
Total Expense per year	$325 to $450	$350 to $450	$375 to $500

The Secretary of the University will furnish information regarding suitable boarding places in the vicinity of the University.

* Laboratory fees vary according to the courses taken.

THE GRADUATE SCHOOL

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.
JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.
FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Commerce.
HARRIS HANCOCK, Ph. D., D. Sc., . . . Professor of Mathematics.
JOHN MILLER BURNAM, Ph. D., ... Professor of Latin.
MAX POLL, Ph. D., . . . Professor of the Germanic Languages.
JOSEPH EDWARD HARRY, Ph. D., Professor of Greek and Dean of the Graduate School.
MERRICK WHITCOMB, Ph. D., ... Professor of History.
LOUIS TRENCHARD MORE, Ph. D., ... Professor of Physics.
BURTIS BURR BREESE, Ph. D., ... Professor of Psychology.
WILLIAM PAXTON BURRIS, A. M., L. H. D., Professor of the History and Principles of Education.
JOHN WILLIAM HALL, A. M., Professor of Elementary Education.
STEPHEN ELMER SLOCUM, B. E., Ph. D., Professor of Applied Mathematics.
*NEVIN M. FENNEMAN, Ph. D., Professor of Geology and Geography.
LAUDER WILLIAM JONES, Ph. D., ... Professor of Chemistry.
GUY ALLEN TAWNEY, Ph. D., ... Professor of Philosophy.
FRANK WADLEIGH CHANDLER, Ph. D., Professor of English and Ropes Professor of Comparative Literature.
PHILLIP OGDEN, Ph. D., . . . Professor of Romance Languages.
PAUL GERHARDT WOOLLEY, B. S., M. D., . Professor of Pathology.
MARTIN H. FISCHER, M. D., Joseph Eichberg Professor of Physiology.
HENRY MCELDERRY KNOWER, Ph. D., . . . Professor of Anatomy.
HARRIS MILLER BENEDICT, Ph. D., ... Professor of Botany.
HENRY S. WEST, Ph. D., . . Professor of Secondary Education.
SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.
——— ———, ... Professor of Zoology.
HARRY SHIPLEY FRY, Ph. D., . . Associate Professor of Chemistry.
WILLIAM BUCHANAN WHERRY, A. B., M. D., Associate Professor of Bacteriology.
SAMUEL JAMES MCINTOSH ALLEN, Ph. D., Associate Professor of Physics.

* Absent on leave, 1915-16.

Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Claude M. Lotspeich, Ph. D., . Associate Professor of German.
Harry Lewis Wieman, Ph. D., . Associate Professor of Zoology.
Emilie Watts McVea, A. M., . Assistant Professor of English.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Edward F. Malone, A. B., M. D., Assistant Professor of Anatomy.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.
Cyrus DeWitt Mead, Ph. D., Assistant Professor of Elementary Education.
Henry G. Hartmann, Ph. D., Assistant Professor of Philosophy.
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science.
Clarence D. Stevens, A. M., . . Assistant Professor of English.
E. E. Thum, E. M., . . . Assistant Professor of Metallurgy.
Walter H. Bucher, Ph. D., ... Instructor in Geology.
James Dysart Magel, Ph. D., ... Instructor in Economics.
Merton Jerome Hubert, A. M., Instructor in French and Italian.
Albert Watson Davison, Ph. D., Instructor in Physical Chemistry.
Otto Charles von Schlichten, A. B., . . Instructor in Geology.
Edward Mack, A. M., D. D., . . Lecturer on Biblical Literature.

INFORMATION FOR STUDENTS

ADMISSION

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School. Students will not be admitted to the Graduate School after the third week of the semester.

INSTRUCTION

The work of each candidate for a graduate degree shall be under the direction of an Advisory Committee, composed of the Dean of the Graduate School and the heads of the departments in which the work is taken.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

The work for the Master's degree requires at least one full year's residence in the Graduate School. A candidate for this degree, at the time of his admission to the Graduate School, and with the approval of the head of the department in which he elects his major work, shall designate the subjects which he desires to pursue. The student must satisfy the Dean of the Graduate School that the courses offered have been approved by his Adviser (the head of the department in which he takes his major), as well as by the heads of the other departments in which he has elected courses. The courses offered for the Master's degree shall represent not less than twenty-four credit hours of graduate instruction, at least twelve of which shall be in the major study. In case the candidate elects a major in the same department in which he completed a major in fulfillment of the requirements for a degree in the College of Liberal Arts, he shall, under the direction of his Adviser, elect sufficient work in some allied department to complete the twelve credit hours. The requirement of a thesis shall be optional with the Adviser. Whenever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester of graduate study. Students taking work in courses open to graduates and undergraduates shall be required to complete an additional amount of work, estimated to be fifty per cent of the regular undergraduate requirements. Candidates for the degree of Master of Arts shall pass an oral examination before a committee of the faculty.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

For the Doctor's degree, three years of graduate study will ordinarily be required. Where the student's college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided that such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German. In order to receive the degree of Doctor of Philosophy, the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than forty-eight units of instruction embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examinations on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum

will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE

With the approval of the Dean of the Graduate School and their Advisers, candidates may submit courses taken in Lane Seminary and in the Hebrew Union College in partial fulfillment of the requirements for the Master of Arts degree. Not more than twelve units may be so counted.

FELLOWSHIPS AND SCHOLARSHIPS

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. (For particulars see page 20). The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

COURSES OF INSTRUCTION

For detailed description of the courses given in the Graduate School, see the Announcements of the College of Liberal Arts and the College for Teachers.

Courses in the Graduate School extend throughout the year, unless designated by "a" (first semester) or "b" (second semester).

ANATOMY

7. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the head of the department.

Professor Knower, Assistant Professor Malone.

ASTRONOMY

For Undergraduates and Graduates

3. Spherical and Practical Astronomy.—Once a week throughout the year. Professor Porter.

4. Celestial Mechanics.—Once a week throughout the year. Professor Porter.

For Further Description of Above Courses, See Page 81.

BIBLICAL LITERATURE

8a. The Literature of the Old Testament.—T., Th., 11:30-12:30. Dr. Mack.

9a. Studies in the Prophets of the Old Testament.—T., 1:00-3:00. Dr. Mack.

8b. The Literature of the New Testament.—T., Th., 11:30-12:30. Dr. Mack.

9b. The Social Teachings of Jesus and the Apostles.—T., 1:00-3:00. Dr. Mack.

For Further Description of Above Courses, See Page 81.

BOTANY

To pursue advanced courses in botany the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES

To enter upon work for the degree of Master of Arts in botany students must have completed Courses 1a, 2a, 3b, 4b, 5, 6a, 7a, 8b, 9b, or their equivalents. (See Botany, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When botany is chosen as a minor for the Degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in botany. The requirements for a higher degree, when botany is chosen as a major subject, are adequately stated under the general requirements for degrees (pages 34-35).

For Undergraduates and Graduates

6a. Plant Histology.—M., 1:00-2:00. Professor Benedict.

7a. Plant Histology Laboratory.—M., 2:00-4:00; W., 1:00-4:00. Professor Benedict.

8b. The Reproduction and Embryology of the Spermatophytes.—M., 1:00-2:00. Professor Benedict.

9b. Reproduction of the Angiosperms.—M., 2:00-4:00; W., 1:00-4:00. Professor Benedict.

10. Special Problems.—The work may be taken as a two or a three-hour course. Professor Benedict.

Primarily for Graduates

20. Current Problems in Botany.—Two credit hours. Professor Benedict.

21. Research. Credit according to number of hours elected. Professor Benedict.

For Further Description of Above Courses, See Page 83.

CHEMISTRY

SPECIAL REQUIREMENTS FOR HIGHER DEGREES

The Degree of Doctor of Philosophy

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a, 6, 7b, 8a, 9a, 12a, 13a. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the advanced courses required in connection with the choice made. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a

maturity acquired by personal intimacy with the literature and method of chemistry.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7b. If the candidate has chosen one of the physical sciences as his major subject, Courses 12a and 13a (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8a and 9a will be taken.

The Master's Degree

A candidate for the Master's degree must present a thesis embodying the results of some experimental work, or a written account in some detail of a subject suggested by the instructor under whose direction the student has been placed.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—T., Th., 8:30-9:30.
Associate Professor Fry.

11. Inorganic Preparations.—Hours to be arranged.
Associate Professor Fry.

12a. Physical Chemistry.—M., W., 11:30-12:30; F., 1:00-2:00.
Dr. Davison.

13b. Physical Chemistry Laboratory.—Th., 1:00-4:00; F., 2:00-5:00. Dr. Davison.

32b. Electrochemistry.—T., Th., S., 11:30-12:30.
Dr. Davison.

33b. Electrochemistry Laboratory.—Th., 1:00-4:00; F., 2:00-5:00. Dr. Davison.

34a. Colloid Chemistry.—Three lectures per week.
Dr. Davison.

[41a. Phase Rule.] Two exercises a week. Hours to be arranged. Dr. Davison.

Omitted in 1915-16.

20. Advanced Organic Chemistry.—Hours to be arranged.
Professor Jones.

21. Advanced Organic Chemistry Laboratory.—Credit according to number of hours elected. Professor Jones.

24b. History of Chemistry.—Three exercises per week. Hours to be arranged. Associate Professor Fry.

[28b. Elementary Spectrum Analysis (Qualitative).] Two laboratory periods per week. Hours to be arranged.

Omitted in 1915-16. Professor Jones.

Primarily for Graduates

30. Research. Professor Jones, Associate Professor Fry, Assistant Professor Goettsch, Assistant Professor Thum.

35a. Some Special Problems and Theories of Organic Chemistry. Professor Jones.

40. Journal Club Meetings. Papers by instructors and advanced students.

For Further Description of Above Courses, See Page 87.

ECONOMICS

(The Sinton Professorship)

For Undergraduates and Graduates

[15a. Railroads.] M., W., F., 10:30-11:30. Dr. Magee.
Omitted in 1915-16.

[15b. Tariffs.] M., W., F., 10:30-11:30. Dr. Magee.
Omitted in 1915-16.

16a. Money and Banking.—M., W., F., 10:30-11:30. Dr. Magee.

16b. Labor.—M., W., F., 10:30-11:30. Dr. Magee.

Primarily for Graduates

11. Elements of Economics.—T., Th., 9:30-10:30. Professor Hicks.

For Further Description of Above Courses, See Page 90.

EDUCATION

Education 3.—Secondary Education. S., 9:30-11:30. Professor West.

Education 3p.—High School Assisting. Three credits. Professor West.

Education 5.—Seminar in Secondary Education. W., 4:00-6:00. Professor West.

Education 7.—Seminar. M., 4:00-5:30. Professor Burris.

Education 12.—Seminar. T., 4:00-6:00. Professor Hall and Assistant Professor Mead.

Education 112.—Seminar. S., 8:30-9:30. Assistant Professor Mead.

For Further Description of Above Courses, See Page 148, Announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

For Upper-Classmen and Graduates

7a. Old English Prose.—M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

8b. Old English Poetry.—M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

10. Chaucer.—T., Th., S., 9:30-10:30.
Assistant Professor Stevens.

17. Studies in the Lyric.—Two hours, to be arranged.
Professor Chandler.

24. Recent European Drama.—T., Th., 1:00-2:00.
Professor Chandler.

12. Literary Composition.—T., Th., 11:30-12:30.
Assistant Professor McVea.

21. English Poetry from Spenser to Burns.—T., Th., 10:30-11:30. Assistant Professor Stevens.

26. The Essay.—M., W., 1:00-2:00.
Assistant Professor Park.

28. English Poetry and Its Continental Relations from 1780-1830. W., 4:00-6:00. Professor Chandler.

29. Materials and Methods in Secondary English.—S., 9:30-11:30. Assistant Professor Young.

For Graduates Only

20. Seminary.—Literary Criticism. T., 4:00-6:00.
Professor Chandler.

For Further Description of Above Courses, See Page 94.

GEOLOGY AND GEOGRAPHY

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—Credit according to number of hours elected. Assistant Professor Carman.

7. Mineralogy.—Two lectures and one laboratory. Hours to be arranged. Mr. von Schlichten.

8. Introductory Paleontology.—T., Th., 8:30-9:30; F., 2:00-5:00.
Dr. Bucher.

12. Petrology.—Two or three hours, to be announced.
Mr. von Schlichten.

13. Special Work in Geology.—Credit according to number of hours elected.

[16. Advanced Physiography of the United States.] Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.
Omitted in 1915-16.

20. Physiography of Europe.—Lecture, W., 4:00-6:00.
Dr. Bucher.

For Further Description of Above Courses, See Page 97.

GERMAN

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with Special Study of the Classic Periods of the Twelfth and Eighteenth Centuries.—M., W., F., 9:30-10:30.
Professor Poll and Assistant.

6. German Literature of the Nineteenth Century.—Th., 4:00-6:00. Professor Poll.

10. German Composition (Advanced Course).—S., 10:30-12:30.
Professor Poll.

[30. Glimpses of German Life and Culture.] S., 10:30-12:30.
Omitted in 1915-16. Professor Poll.

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

[11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.] *Second semester*, T., 4:00-6:00.
Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.
Omitted in 1915-16.

7. Middle High German.—M., 4:00-6:00.
Associate Professor Lotspeich.

[8. Old High German.] M., 4:00-6:00.
Omitted in 1915-16. Associate Professor Lotspeich.

[13. Gothic.] W., 4:00-6:00. Associate Professor Lotspeich.
Omitted in 1915-16.

[26. Old Norse.] M., 4:00-6:00.
Omitted in 1915-16. Associate Professor Lotspeich.

[9b. German Seminary.] *Second semester*, T., 4:00-6:00.
Omitted in 1915-16. Professor Poll.

For Further Description of Above Courses, See Page 100.

GREEK

For Undergraduates and Graduates

13. Greek Art.—T., 10:30-11:30. Professor Harry.

Primarily for Graduates

5. Rapid Reading.—Th., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—M., 3:00-5:00. Professor Harry.

7. Greek Seminary.—Tragedy and Comedy (1915-16). M., 3:00-5:00. Professor Harry.

Open to graduates and to those who have completed the undergraduate courses in Greek.

For Further Description of Above Courses, See Page 103.

HISTORY

For Undergraduates and Graduates

2. The Renaissance in Italy and Germany.—T., Th., 9:30-10:30. Professor Whitcomb.

[25. European History Since 1814.] T., Th., 10:30-11:30. Omitted in 1915-16. Professor Whitcomb.

46. History of Germany.—T., Th., 10:30-11:30. Professor Whitcomb.

20. Spain and Spanish America.—T., Th., 1:00-2:00. Associate Professor Cox.

27. Recent History of the United States.—M., W., 11:30-12:30. Associate Professor Cox.

[28. American Territorial History.] T., Th., 11:30-12:30. Omitted in 1915-16. Associate Professor Cox.

35. History of the Trans-Allegheny Region.—S., 9:30-10:30. Associate Professor Cox.

39. Seminary in American History.—S., 10:30-12:30. Associate Professor Cox.

For Further Description of Above Courses, See Page 104.

LATIN

Primarily for Graduates

(Hours in all cases to be arranged)

9. Latin and Romance Palæography.—Professor Burnam.

Prerequisite: Four years of undergraduate work and ability to read French and German.

10. Latin Seminary.—Caesar. Professor Burnam.

12. Graduate Study.—Credit according to the work elected and completed under the direction of the teaching staff of the Department. Professor Burnam.

MATHEMATICS

For Undergraduates and Graduates

8a. Advanced Integral Calculus.—M., W., F., 9:30-10:30. Professor Hancock.

9b. Differential Equations.—M., W., F., 9:30-10:30. Professor Hancock.

[15. Theory of Equations, Including Determinants.] M., W., F., 9:30-10:30. Professor Hancock.

Omitted in 1915-16.

Primarily for Graduates

25. Elliptic Functions.—M., Th., 4:00-6:00. Professor Hancock.

For Further Description of Above Courses, See Page 108.

MATHEMATICS (APPLIED)

Primarily for Graduates

11b. Fourier's Series and Spherical Harmonics.—*Second semester,* Th., 4:00-6:00; S., 9:30-10:30. Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—*First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

For Graduates Only

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid or gaseous bodies. Professor Slocum.

For Other Courses in Mathematics See Page 108.

PATHOLOGY AND BACTERIOLOGY

8. Research.—Open to any qualified person after consultation with the head of the department.

Professor Woolley, Associate Professor Wherry.

PHILOSOPHY

For Undergraduates and Graduates

2b. Theory of Scientific Method.—M., W., F., 9:30-10:30. Professor Tawney.

[3a. History of Philosophy from the Italian Renaissance to the Time of Kant.] M., W., F., 8:30-9:30.

Omitted in 1915-16.

[3b. History of Modern Philosophy from the Time of Kant.] M., W., F., 8:30-9:30.

Omitted in 1915-16.

4a. History of Philosophy to the Beginning of the Christian Era.—M., W., F., 8:30-9:30. Professor Tawney.

4b. History of the Philosophy of the Middle Ages.—M., W., F., 8:30-9:30. Professor Tawney.

5a. Ethics.—

Sec. I, M., W., F., 10:30-11:30. Professor Tawney.

Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Hartmann.

5b. Ethical Interpretations—

Sec. I, M., W., F., 10:30-11:30. Professor Tawney.

Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Hartmann.

[6a. History of Ethics.] T., Th., 11:30-12:30.

Omitted in 1915-16. Assistant Professor Hartmann.

[6b. History of Moral Ideas.] T., Th., 11:30-12:30.

Omitted in 1915-16.

8a. Social Psychology.—See Psychology 8a.

8b. Aesthetics, the Theory of Art and the Beautiful.—M., W., F., 9:30-10:30. Assistant Professor Hartmann.

11. Contemporary Philosophy.—S., 9:30-10:30.
Professor Tawney.

Primarily for Graduates

16. Locke, Berkeley, and Hume.—Th., 1:00-3:00.
Assistant Professor Hartmann.

10. Types of Philosophical Realism Historically and Critically Treated.—T., 1:00-3:00. Professor Tawney.

For Further Description of Above Courses, See Page 110.

PHYSICS

For Undergraduates and Graduates

32b. Philosophy of Science.—Twice weekly.
Professor More.

3a. Theoretical Mechanics.—T., Th., S., 11:30-12:30.
Professor More.

18b. Theory of Electricity and Magnetism.—T., Th., S., 11:30-12:30. Professor More.

[19a. Theory of Heat.] T., Th., S., 11:30-12:30.
Omitted in 1915-16. Professor More.

[15b. Theory of Light.] T., Th., S., 11:30-12:30.
Omitted in 1915-16. Professor More.

8. Advanced Experimental Physics.—Credit according to number of hours elected. Associate Professor Allen.

10. Seminary.—T., 4:00-5:00. Associate Professor Allen.

For Graduates Only

7. Lectures on Theoretical Physics. Twice weekly.
Professor More.

25a. Theoretical Mechanics.—See under Applied Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician.
Professor More and Associate Professor Allen.

For Further Description of Above Courses, See Page 114.

PHYSIOLOGY

(The Joseph Eichberg Professorship)

7. Research.—Open to any qualified person after consultation with the head of the department. Professor Fischer.

22a. Bio-Chemistry.—*First semester,* M., W., F., 11:30-12:30.

22a. Bio-Chemistry Laboratory.—*First semester,* M., W., 8:30-11:30; F., 1:00-4:00. Assistant Professor Reemelin.

Prerequisite: Chemistry 8a and 9a.

POLITICAL AND SOCIAL SCIENCE

POLITICAL SCIENCE

For Undergraduates and Graduates

2a. International Law.—M., W., 11:30-12:30; F., 1:00-2:00.
Professor Lowrie.

2b. European Governments.—M., W., 11:30-12:30; F., 1:00-2:00. Assistant Professor Gardner.

[6a. Public Finance and Taxation.] T., Th., 8:30-9:30.
Omitted in 1915-16. Professor Lowrie.

9b. American Diplomacy.—T., Th., 11:30-12:30.
Dr. Perkins.

11a. Municipal Government.—M., W., F., 8:30-9:30.
Assistant Professor Gardner.

11b. Municipal Functions.—M., W., F., 8:30-9:30.
Professor Lowrie.

[4b. Political Parties and Party Methods.] T., Th., 8:30-9:30. Omitted in 1915-16. Assistant Professor Gardner.

17a. Constitutional Law.—T., Th., 8:30-9:30.
Assistant Professor Gardner.

19b. Public Utilities.—T., Th., 8:30-9:30.
Assistant Professor Gardner.

Primarily for Graduates

25. Seminar in Municipal Government.—M., 4:00-6:00.
Professor Lowrie.

3. Political Theory.—T., Th., 1:00-2:00.
Assistant Professor Gardner.

SOCIAL SCIENCE

For Undergraduates and Graduates

7. Modern Social Theories.—M., W., 10:30-11:30.
Assistant Professor Parker.

15. Modern Philanthropy.—M., W., 9:30-10:30.
Assistant Professor Parker.

20. Criminals and Delinquents.—T., Th., 10:30-11:30.
Assistant Professor Parker.

21. Social Problems.—M., W., 11:30-12:30.
Assistant Professor Parker.

22. Seminary.—Credit according to number of hours elected.
Assistant Professor Parker.

For Further Description of Above Courses, See Page 116.

PSYCHOLOGY

For Undergraduates and Graduates

2a. Experimental Psychology.—M., W., F., 2:00-4:30.
Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—M., W., F., 2:00-4:30.
Professor Breese and Mr. Isaacs.

8a. Social Psychology.—M., W., F., 9:30-10:30.
Assistant Professor Hartmann.

9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.
Professor Breese and Mr. Isaacs.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Th., 3:00-5:00. Professor Breese.

6a. Educational Psychology.—*First semester.* Hours to be arranged. Professor Breese.

For Further Description of Above Courses, See Page 120.

ROMANCE LANGUAGES

FRENCH

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—T., Th., 9:30-10:30. Professor Ogden.

5. French Drama in the Nineteenth Century.—W., 1:00-2:00; F., 2:00-3:00. Mr. Hubert.

10. Old French Readings.—Two credits. Hours to be arranged. Mr. Hubert.

24. The Prose Writers of the Eighteenth Century.—T., 4:00-6:00. Professor Ogden.

26. French Poets in the Nineteenth Century.—T., Th., 8:30-9:30. Professor Ogden.

SPANISH

For Undergraduates and Graduates

[8. Spanish Literature in the Sixteenth and Seventeenth Centuries.] Th., 3:00-5:00. Assistant Professor Bassett.

Omitted in 1915-16.

22. The Picaroon Novel.—Th., 3:00-5:00. Assistant Professor Bassett.

23. Early Spanish.—Two credits. Hours to be arranged. Assistant Professor Bassett.

ITALIAN

For Undergraduates and Graduates

16. Italian Prose in the Nineteenth Century.—Two hours, to be arranged. Mr. Hubert.

For Further Description of Above Courses, See Pages 122-124.

ZOOLOGY

To pursue advanced courses in zoology, the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

Requirements for Degrees

To enter upon work for the degree of Master of Arts in zoology, students must have completed Courses 1a, 2a, 3b, 4b, 15, 17b, 18b, 19a, 13b, 14b, 20a, or their equivalents. (See Zoology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. The requirements for a higher degree, when zoology is chosen as a major subject, are adequately stated under the general requirements for degrees (pages 34-35).

For Undergraduates and Graduates

19a. Embryology of Vertebrates.—T., Th., 1:00-2:00.
Assistant Professor Chambers.

20a. Embryology of Vertebrates, Laboratory.—T., Th., 2:00-5:00. Assistant Professor Chambers and Mr. Isaacs.

15a. Invertebrate Morphology.—M., W., 1:00-2:00.
Associate Professor Wieman.

16a. Invertebrate Morphology, Laboratory.—M., W., 2:00-5:00.
Associate Professor Wieman.

[17b. Comparative Anatomy of Vertebrates.] T., Th., 1:00-2:00. Assistant Professor Chambers.
Omitted in 1915-16.

[18b. Comparative Anatomy of Vertebrates, Laboratory.] T., Th., 2:00-5:00. Assistant Professor Chambers.
Omitted in 1915-16.

13b. Animal Physiology.—T., Th., 1:00-2:00.
Assistant Professor Chambers.

14b. Animal Physiology Laboratory.—T., Th., 2:00-5:00.
Assistant Professor Chambers.

[10a. Microscopical Technique.] M., W., 1:00-4:00; F., 2:00-5:00. Associate Professor Wieman.
Omitted in 1915-16.

[10b. Cytology.] M., W., 1:00-4:00; F., 2:00-5:00.
Omitted in 1915-16. Associate Professor Wieman.

Primarily for Graduates

30. Current Problems in Zoology.—Two credit hours.
Associate Professor Wieman.

31. Research. Hours to be arranged.
Associate Professor Wieman and
Assistant Professor Chambers.

For Further Description of Above Courses, See Page 125.

McMICKEN COLLEGE OF LIBERAL ARTS

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph. D., LL. D., President of the University.

JERMAIN GILDERSLEEVE PORTER, Ph. D., Director of the Observatory and Professor of Astronomy.

FREDERICK CHARLES HICKS, Ph. D., Sinton Professor of Economics and Commerce and Supervisor of the Evening Academic Courses.

HARRIS HANCOCK, Ph. D., D. Sc., . . . Professor of Mathematics.

JOHN MILLER BURNAM, Ph. D., ... Professor of Latin.

MAX POLL, Ph. D., . . . Professor of the Germanic Languages.

JOSEPH EDWARD HARRY, Ph. D., ... Professor of Greek.

MERRICK WHITCOMB, Ph. D., ... Professor of History.

LOUIS TRENCHARD MORE, Ph. D., ... Professor of Physics.

BURTIS BURR BREESE, Ph. D., ... Professor of Psychology.

STEPHEN ELMER SLOCUM, B. E., Ph. D., Professor of Applied Mathematics.

*NEVIN M. FENNEMAN, Ph. D., Professor of Geology and Geography.

LAUDER WILLIAM JONES, Ph. D., ... Professor of Chemistry.

GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.

FRANK WADLEIGH CHANDLER, Ph. D., Professor of English, Ropes Professor of Comparative Literature, and Dean of the College of Liberal Arts.

PHILLIP OGDEN, Ph. D., . . . Professor of Romance Languages.

HARRIS MILLER BENEDICT, Ph. D., ... Professor of Botany.

HENRY S. WEST, Ph. D., ... Director of School Affiliation.

SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.

——— ———, ... Professor of Zoology.

HARRY SHIPLEY FRY, Ph. D., . Associate Professor of Chemistry.

SAMUEL JAMES MCINTOSH ALLEN, Ph. D., Associate Professor of Physics.

ISAAC JOSLIN COX, Ph. D., . . . Associate Professor of History.

CLAUDE M. LOTSPEICH, Ph. D., . Associate Professor of German.

HARRY LEWIS WIEMAN, Ph. D., . Associate Professor of Zoology.

EMILIE WATTS MCVEA, A. M., Assistant Professor of English and Dean of Women.

CHARLES NAPOLEON MOORE, Ph. D., Assistant Professor of Mathematics.

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* Absent on leave, 1915-16.

Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Benjamin Carlton Van Wye, A. M., Assistant Professor of Public Speaking and English.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Ralph Emerson Bassett, A. M., Assistant Professor of Romance Languages.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
Clyde William Park, A. M., . . Assistant Professor of English.
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science.
Henry G. Hartmann, Ph. D., Assistant Professor of Philosophy.
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science.
Clarence D. Stevens, A. M., . . Assistant Professor of English.
Ernest E. Thum, E. M., . . Assistant Professor of Metallurgy.
Alfred Brodbeck, ... Director of Physical Education.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Arthur James Kinsella, A. M., ... Instructor in Greek.
Joseph Henry Kindle, A. M., ... Instructor in Mathematics.
Platt Bishop Evens, Mechanician and Instructor in Laboratory Arts.
Cora May Box, A. M., ... Instructor in Zoology.
Eleanor Katherine Nippert, A. B., . . . Instructor in German.
Martin Ludwich, A. M., ... Instructor in German.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.
Edwin W. Esslinger, A. M., . Instructor in Analytical Chemistry.
Walter H. Bucher, Ph. D., ... Instructor in Geology.
James Dysart Magee, Ph. D., ... Instructor in Economics.
Merton Jerome Hubert, A. M., Instructor in French and Italian.
Dexter Perkins, Ph. D., ... Instructor in History.
Levi Alexander Giddings, M. S., ... Instructor in Botany.
Walter Wesley Plock, ... Instructor in English.
Willard A. Kinne, A. B., . . Instructor in French and Spanish.
Ray Gould Knickerbocker, M. A., . . Instructor in Metallurgy.
Albert Watson Davison, Ph. D., Instructor in Physical Chemistry.
Otto Charles von Schlichten, A. B., . . Instructor in Geology.
Edward Mack, A. M., D. D., . . Lecturer on Biblical Literature.

Other Appointments for 1915-16

Schachne Isaacs, A. M., ... Assistant in Psychology.
Raphael Isaacs, A. M., . Assistant in Embryology and Zoology.

ANNETTE FRANCES BRAUN, Ph. D., ... Assistant in Zoology.
LEONORA NEUFFER, A. M., ... Assistant in Chemistry.
HAROLD H. WAGNER, ... Assistant in Physical Education.
MIRIAM URBANSKY, ... Assistant in History.
HELEN A. STANLEY, A. M., . . . Assistant in Latin and English.
MADELAINE MAURY WRIGHT, A. B., ... Assistant in English.
CLARENCE L. FERNBERG, A. M., ... Assistant in English.
——— ———, ... Hanna Fellow in Physics.
——— ———, ... D. A. R. Fellow in American History.
E. LUCY BRAUN, Ph. D., ... Graduate Assistant in Botany.
——— ———, ... Graduate Assistant in German.

REQUIREMENTS FOR ADMISSION TO THE McMICKEN COLLEGE OF LIBERAL ARTS

Candidates for admission as undergraduates must be at least sixteen years of age. To secure unconditional admission, they must give evidence of having completed satisfactorily an amount of preparatory study represented by sixteen units, a unit being the quantity of work represented by a full year's study of a subject, with recitation time devoted to it aggregating the equivalent of 120 sixty-minute periods; laboratory, shop, drawing room, or field work to receive a double allowance of time when counted in the reckoning of units. Ordinarily, in order to fulfill this requirement, a study must be pursued for five periods per week throughout an academic year; but in schools where the school year is long, for example, 40 weeks, and the recitation periods are not less than 45 minutes in length, four periods per week for a year may fulfill the time requirement for a unit. The sixteen units must be made up in subjects, selected according to directions, from those named below; and candidates must complete the assignment of work specified for each subject in the section headed "Definition of Units." Of these sixteen units every candidate for admission to the McMicken College of Liberal Arts must present the following:

ENGLISH—Three units, in which there can be no "condition."

MATHEMATICS—One unit in Algebra and one unit in Plane Geometry.

HISTORY—One unit.

LANGUAGE—Three units, from the five languages: Latin, Greek, French, German, Spanish; two units must be in the same language. Candidates who intend to pursue the study of Latin in the University must present four units in Latin.

In addition to these fixed requirements the candidate must offer a number of units selected from the list of subjects below, sufficient, with the units specified above, to amount to a total of sixteen. The number of units that may be offered in any subject is shown in the following table:

	Number of Units Accepted for Admission		
	Minimum		Maximum
English	3	required	4
Latin	1	Three units required, two of which must be in one language	..or 2 or 3 or 4
Greek	1		..or.....2 or 3
French	1		..or 2 or 3 or 4
German	1		..or 2 or 3 or 4
Spanish	1		2
General or Medieval and Modern History	1	One unit required	1
Ancient	½		1
English	½		1
American	½		1
American and Civics	1		1
Economics	½		½
Algebra	1	required	or...1½ or 2
Geometry, Plane	1	required	1
Geometry, Solid	½		½
Trigonometry	½		1
Civics	½		½
Physics	1		1
Chemistry	1		1
*Zoology	1		1
*Botany	1		1
Physical Geography	½		1
Astronomy	½		½
Bookkeeping	1		2
Stenography-Typewriting	1		1
Commercial Geography	½		½
Commercial Law	½		½
Drawing	1		1
Manual Training	1		or 2 or 3 or 4
Domestic Science	1		or 2 or 3 or 4

ENTRANCE CONDITIONS

Students who are deficient in not more than two units of the sixteen required for admission, provided their credit includes three units of English, may be admitted conditionally to the College of Liberal Arts. All such entrance conditions must be removed before the student is allowed to register as a regular student for a second year of residence at the University.

ENTRANCE EXAMINATIONS

Examinations for admission will be held on June 14, 15, 16, 17, 18, 19, and on September 9, 10, 11, 13, 14, 15, 1915. In 1916 they will be held on January 3, 4, 5, 6, 7, 8, and on June 12, 13, 14, 15, 16, 17.

* One-half unit will be allowed in Zoology and one-half unit in Botany when these two subjects are presented together as one unit in the same year.

Students who desire to take these examinations must obtain permission beforehand from the Director of School Affiliation. All applications for permission to take the entrance examinations should be made at least two days before the first day of the examination period. Some of the examinations may be taken in the spring and the remainder in the fall if so desired. Students who apply for entrance examinations at times other than the days specified will be charged a fee of five dollars. Extra examinations, however, will not be furnished except for good and sufficient reasons.

Examinations for candidates without graduation certificates.—A candidate for admission to the University, coming from one of the accredited schools, who is not a graduate of such school, will not be admitted to the entrance examinations within one year after leaving such preparatory school, unless recommended for examination by the principal of the school from which he comes.

Students intending to take the entrance examinations should consult the statement of the entrance requirements, as printed on a preceding page, and arrange to take their examinations

(a) in the fixed requirements, and

(b) in enough additional subjects to make a total of sixteen units.

The work covered by each unit or group of units in the various subjects may be found on the following pages. Specimen entrance examination questions will be furnished free of charge on application to the Director of School Affiliation.

SCHEDULE OF ENTRANCE EXAMINATIONS

June 14 and September 9, 1915; January 3 and June 12, 1916:

8:30–11:00	English	First 3 units
11:00–12:00	English	Fourth unit
1:00– 3:00	Physics	1 unit
3:00– 4:00	Solid Geometry	½ unit
4:00– 5:00	Physical Geography	½ or 1 unit

June 15 and September 10, 1915; January 4 and June 13, 1916:

8:30–10:30	Latin	First and second units
10:30–12:00	Latin	Third and fourth units
1:00– 3:00	Chemistry	1 unit
3:00– 4:00	Astronomy	½ unit
4:00– 5:00	Civics	½ unit

June 16 and September 11, 1915; January 5 and June 14, 1916:

8:30–10:30	French	First and second units
10:30–12:00	French	Third and fourth units
1:00– 2:30	Plane Geometry	1 unit
2:30– 4:00	Algebra	First unit
4:00– 5:00	Advanced Algebra	½ or 1 unit additional

June 17 and September 13, 1915; January 6 and June 15, 1916:

8:30– 9:30	Ancient History	½ or 1 unit
9:30–10:30	American History	½ or 1 unit
10:30–12:00	General or Medieval and Modern History	1 unit
1:00– 2:00	English History	½ or 1 unit
2:00– 3:00	American History and Civics	1 unit
3:00– 5:00	Spanish	First and second units

June 18 and September 14, 1915; January 7 and June 16, 1916:

8:30–10:30	German	First and second units
10:30–12:00	German	Third and fourth units
1:00– 3:00	Zoology	½ or 1 unit
3:00– 5:00	Botany	½ or 1 unit

June 19 and September 15, 1915; January 8 and June 17, 1916:

8:30–10:30	Greek	First and second units
	Bookkeeping	1 or 2 units
10:30–11:30	Greek	Third unit
	Stenography-Typewriting	1 unit
11:30–12:00	Economics	½ unit
1:00– 2:00	Trigonometry	½ or 1 unit
	Commercial Geography	½ unit
	Commercial Law	½ unit
4:00– 5:00	Manual Training	1 to 4 units
	Drawing	1 unit

DEFINITION OF UNITS

Detailed statements showing the exact amount of work required for each unit or group of units in the various subjects are here presented:

ENGLISH COMPOSITION AND LITERATURE

The examination in English will consist of two parts, one relating to composition and the other relating primarily to literature.

(a) The candidate should possess such knowledge of English grammar and of the principles of rhetoric, including the construction of the paragraph and of the sentence, as will enable him to write simply and correctly on some subject familiar to him.

(b) The candidate will be required to show his acquaintance with good literature and his knowledge of literary values. The books adopted by the National Conference on Uniform Entrance Requirements, as given below, are recommended in preparation for this part of the examination; but any course of equivalent amount and value will be received. The examination is intended to test rather the candidate's power to judge literary values so that he may read with intelligence and appreciation, than his knowledge of specific books.

I. THREE UNITS.—The preparation should include the following subjects:

Composition.—There should be practice in writing at regular and frequent intervals throughout all the years of the preparatory course. Special attention should be given to the proper structure of sentences and paragraphs, and the method of planning or outlining an essay.

Grammar.—It is expected that the applicant will be familiar with the essentials of English grammar, and will be able to explain the construction of sentences that occur in the classics he has read.

English Classics.—The following books are recommended for reading and study:

a. For Reading, 1915 to 1919

I (two to be selected): The *Old Testament,* comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey,* with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad,* with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid.* The *Odyssey, Iliad,* and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II (two to be selected): Shakespeare's *Merchant of Venice; Midsummer Night's Dream; As You Like It; Twelfth Night; The Tempest; Romeo and Juliet; King John; Richard III; Henry the Fifth; Coriolanus;* and *Julius Caesar, Macbeth,* and *Hamlet,* if these have not been chosen in the group for intensive study.

III. Prose Fiction.—Malory's *Morte d'Arthur* (about 100 pages); Bunyan's *Pilgrim's Progress,* Part I; Swift's *Gulliver's Travels* (voyages to Lilliput and to Brobdingnag); DeFoe's *Robinson Crusoe,* Part I; Goldsmith's *Vicar of Wakefield;* Frances Burney's *Evelina;* Scott's Novels (any one); Jane Austen's Novels (any one); Maria Edgeworth's *Castle Rackrent,* or *The Absentee;* Dickens' Novels (any one); Thackeray's Novels (any one); George Eliot's Novels (any one); Mrs. Gaskell's *Cranford;* Kingsley's *Westward Ho!* or *Hereward, the Wake;* Reade's *The Cloister and the Hearth;* Blackmore's *Lorna Doone;* Hughes' *Tom Brown's Schooldays;* Stevenson's *Treasure Island,* or *Kidnapped,* or *Master of Ballantrae;* Cooper's Novels (any one); Poe's Selected Tales; Hawthorne's *The House of the Seven Gables,* or *Twice-Told Tales,* or *Moses from an Old Manse;* a collection of Short Stories by various standard writers.

IV. Essays, Biography, etc.—Addison and Steele's *The Sir*

Roger de Coverley Papers, or Selections from the *Tatler* and *Spectator* (about 200 pages); Boswell's *Selections from the Life of Johnson* (about 200 pages); Franklin's *Autobiography;* Irving's *Sketch Book* (about 200 pages), or *Life of Goldsmith;* Southey's *Life of Nelson;* Lamb's *Essays of Elia* (about 100 pages); Lockhart's *Life of Scott* (about 200 pages); Thackeray's Lectures on Swift, Addison, and Steele in the English Humourists; Macaulay's *Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederic the Great, Madame d'Arblay* (any one); Trevelyan's *Life of Macaulay* (about 200 pages); Ruskin's *Sesame and Lilies,* or Selections (about 150 pages); Dana's *Two Years before the Mast;* Selections from Lincoln, including at least the two *Inaugurals,* the *Speeches in Independence Hall and at Gettysburg,* the *Last Public Address,* and the *Letter to Horace Greeley,* together with a brief memoir or estimate; Parkman's *The Oregon Trail;* Thoreau's *Walden;* Lowell's *Selected Essays* (about 150 pages); Holmes's *The Autocrat of the Breakfast Table;* Stevenson's *An Inland Voyage,* and *Travels with a Donkey;* Huxley's *Autobiography,* and selections from Lay Sermons, including the addresses on *Improving Natural Knowledge, A Liberal Education,* and *A Piece of Chalk;* a collection of Essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of Letters by various standard writers.

V. Poetry.—Palgrave's *Golden Treasury* (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Palgrave's *Golden Treasury* (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under *b*); Goldsmith's *The Traveller,* and *The Deserted Village;* Pope's *The Rape of the Lock;* a collection of English and Scottish Ballads, as, for example, some Robin Hood ballads, *The Battle of Otterburn, King Estmere, Young Beichan, Bewick and Grahame, Sir Patrick Spens,* and a selection from later ballads; Coleridge's *The Ancient Mariner, Christabel,* and *Kubla Khan;* Byron's *Childe Harold,* Canto III or IV, and *The Prisoner of Chillon;* Scott's *The Lady of the Lake,* or *Marmion;* Macaulay's *The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivry;* Tennyson's *The Princess,* or *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa-Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus—", Instans Tyrannus;* Arnold's *Sohrab and Rustum,* and *The Forsaken Mer-*

man; Selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

b. For Intensive Study, 1915 to 1919

This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

I. Drama.—Shakespeare's *Julius Caesar, Macbeth, Hamlet.*

II. Poetry.—Milton's *L'Allegro, Il Penseroso,* and either *Comus* or *Lycidas;* Tennyson's *The Coming of Arthur, The Holy Grail,* and *The Passing of Arthur;* the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's *Golden Treasury* (First Series).

III. Oratory.—Burke's *Speech on Conciliation with America;* Macaulay's *Two Speeches on Copyright,* and Lincoln's *Speech at Cooper Union;* Washington's *Farewell Address,* and Webster's *First Bunker Hill Oration.*

IV. Essays.—Carlyle's *Essay on Burns,* with a selection from Burns's Poems; Macaulay's *Life of Johnson;* Emerson's *Essay on Manners.*

II. Fourth Unit.—For the fourth unit in English composition and literature, the preparation should include, during the applicant's fourth year of the high school course, a study of the outlines of English literary history, based upon one of the recent manuals of English literature, and accompanied by a considerable amount of reading of representative authors.

LATIN

I. First Unit.—The student should have digested some Beginner's Book like that of Coy, or Collar and Daniel.

II. Second Unit.—Caesar's *Gallic War,* Books I-IV, or an equivalent amount selected from the remaining portions of that work. It is expected that in the first year's preparation the student has mastered the declensions, comparisons, and verbal inflections, knows the leading rules of syntax, and possesses some vocabulary. Along with Caesar there should be some exercise in Latin Composition, a wider and deeper acquaintance with grammatical principles of the language, and a good vocabulary. Sallust's *Catiline* or an equivalent amount of the *Jugurtha* may be substituted for two books of Caesar. It is furthermore suggested that the teacher, if possible, vary the Caesar lessons by selections from Books V-VII. The Department of Latin is also

willing to accept Miller and Beeson's second year Latin Book as a substitute for Caesar.

III. Third Unit.—Cicero, *In Catilinam*, I-IV, and *Pro Archia*, with more practice in composition. It is also preferred that the student should study an additional oration or short treatise, e. g., *de Amicitia*, or selections from the *Letters*. He should also begin the practice of writing continuous prose.

IV. Fourth Unit.—Vergil's *Aeneid*, I-VI, with scanning and prosody. An equivalent amount of verse from *Aeneid*, VII-XII, or Ovid will be accepted in place of *Aeneid*, III and V. If circumstances permit, it is very advantageous to let Ovid precede Vergil. It is preferable that the composition done during this year be based on Cicero.

GREEK

I. First Unit.—White's *Beginner's Book* or an equivalent. Grammar and composition work.

II. Second Unit.—Xenophon's *Anabasis*, Books I and II. Grammar and composition work.

III. Third Unit.—In addition to the work outlined in paragraphs I and II, the following:

Xenophon, *Anabasis*, Books III and IV.

Homer, *Iliad*, Books I-III.

Composition.

Grammar: Babbitt, Goodell, Goodwin, or Hadley-Allen

FRENCH

I. One Unit.—

(a) The translation at sight of very simple French prose.

(b) The translation into French of easy sentences to test the candidate's familiarity with elementary grammar.

(c) One full year of five periods a week is necessary to meet the requirements in one unit. The first one hundred and fifty pages in Fraser and Squair's *French Grammar* may be taken as a standard of the amount of grammar which should be covered during that period.

II. Two Units.—

(a) The translation at sight of ordinary prose. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the regular verbs; the auxiliaries être, avoir; the more frequent irregular verbs.

(c) The translation into French of sentences to test the candidate's familiarity with elementary grammar.

Two full years of five periods a week are necessary to meet the requirements in two units. Fraser and Squair's *French Grammar*,

complete, may be taken as a standard of the amount of grammar which should be covered during that period. Not less than three hundred duodecimo pages should be read from the works of at least three different authors. Suitable texts for these two units are: *Le Siège de Berlin* and *La Dernière Classe,* Daudet; *La Mère Sauvage,* Maupassant; *Le Tour de la France,* Bruno; *Le Petit Chose,* Daudet; *Sans Famille,* Malot; *La Tache du Petit Pierre,* Mairet; *La Poudre aux Yeux,* Labiche et Martin; *Le Voyage de M. Perrichon,* Labiche et Martin; *La Cigale chez les Fourmis,* Legouvé et Labiche.

III. Three Units.—A continuation for one year of work just outlined. The candidate should be able to read at sight ordinary French prose or poetry, to translate into French easy English prose, to answer questions involving a more thorough knowledge of the essentials of French syntax, especially the ordinary uses of tenses and modes. It is expected that the candidate for three units will have worked through a grammar and will have read five or six hundred pages of French during three years of five periods a week. Suitable texts for these three units are: The plays of Labiche, Scribe, etc.; *Gil Blas,* Lesage; *Le Tour de la France,* Bruno; *La Belle Nivernaise,* Daudet; *Les Fourberies de Scapin, Le Médicin Malgré Lui,* Molière; Voltaire's historical writings; *Le Cid,* Corneille; Coppée's poems, etc.

IV. Four Units.—

(a) The translation at sight of standard French. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the irregular verbs and the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

(c) The translation into French of a connected passage of English prose.

(d) The writing of a theme in French on a given topic.

Four full years in a good preparatory school are necessary to meet the requirements for four units. Not less than six hundred pages should be read from the works of at least five different authors. Suitable texts besides those given above are *Colomba,* Mérimée; *La Mare au Diable,* Sand; *Pêcheur d' Islande,* Loti; *La Canne de Jonc,* Vigny; *Horace,* Corneille; *L' Avare* and *Le Bourgeois Gentilhomme,* Molière; *Athalie,* Racine; *Le Gendre de M. Poirier,* Sandeau; Selections from Victor Hugo; *Le Monde où l'on s'ennuie,* Pailleron.

The student should have constant practice in giving paraphrases and abstracts. He should be trained to write French from dictation in order to enable him to understand lectures delivered in that language.

GERMAN

I. One Unit.—

(a) The translation at sight of very simple German prose.

(b) The translation into German of easy sentences, to test the candidate's familiarity with elementary grammar.

The candidate ought to have read not less than one hundred pages of easy German, such as is found in Hewitt's or Harris' *German Reader.*

II. Two Units.—

(a) The translation at sight of simple German prose.

(b) The translation into German of easy connected prose, to test the candidate's familiarity with elementary grammar. The requirement in elementary grammar includes the conjugation of the weak and strong verbs; the declination of articles, adjectives, pronouns, and such nouns as are readily classified; the prepositions; the simpler uses of the modal auxiliaries; the elements of syntax, especially the rules governing the order of words.

The candidate ought to have read not less than two hundred pages of easy German, such as is found in Hewett's or Harris's *German Reader.*

In general, to obtain two units in German, two years' work in a good preparatory school is required.

III. Three Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate ought to have read not less than four hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Wilhelm Tell;* Lessing's *Minna von Barnhelm;* Goethe's *Hermann und Dorothea;* Wildenbruch's *Das edle Blut;* Fontane's *Vor dem Sturm;* Moser's *Kopnickerstrasse.*

Generally speaking, three years' work in a good preparatory school will be necessary in order to meet the requirements for three units.

IV. Four Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar. The candidate will be expected to show a thorough knowledge of accidence, the principal uses of prepositions and conjunctions, and the essentials of syntax, especially the uses of the modal auxiliaries and of the subjunctive and infinitive modes.

The candidate ought to have read not less than six hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Jungfrau von Orleans;* Goethe's *Iphigenie;* Freytag's *Die Journalisten, Soll und Haben, Bilder aus der deutschen Vergangenheit;* Riehl's *Culturgeschichtliche Novellen.*

In general, to obtain four units in German, four years' work in a good preparatory school is required.

SPANISH

I. One Unit.—

(a) The translation at sight of simple Spanish prose.

(b) The essentials of grammar, including the conjugations of the regular and the most frequently used irregular verbs. The translation into Spanish of short sentences, intended to test the candidate's knowledge of the essential points in grammar. Conversation and dictation.

In general, one year's work in a preparatory school, or its equivalent, is necessary to meet the requirements for one unit. The candidate will be expected to have worked through a short Spanish grammar, or the principal parts of a more complete one, and to have read at least one hundred pages of simple Spanish. Suitable texts for one unit are: *Spanish Reader,* Bransby; *Victoria y Otros Cuentos,* Asensi; *Gil Blas,* Padre Isla; *El Pájaro Verde,* Valera; *O Locura o Santidad,* Echegaray; *Zaragüeta,* Carrión y Vital Aza; *El Clavo,* Alarcón, etc.

II. Two Units.—

In general, two years' work in a preparatory school, or its equivalent, will be needed to meet the requirements for two units. In addition to the work outlined in Paragraph I, the candidate will be expected to have worked through an elementary composition book and to have read from two to three hundred pages of modern Spanish. Suitable texts for the second unit are: *El Capitán Veneno,* Alarcón; *El Sí de las Niñas,* Moratín; *Doña Perfecta,* Galdós; *Guzmán el Bueno,* Gil y Zárate; *Cuentos Alegres,* Taboada; *Legends, Tales, and Poems,* Bécquer; *El Haz de Leña,* Núñez de Arce; *José,* Valdés, etc.

MATHEMATICS

I. Algebra. One Unit. Definitions.—Integral numbers. Rational numbers. Irrational numbers. The six fundamental operations of algebra. Algebraic expressions. Rational Algebraic expressions. Application of the four fundamental operations to Rational Algebraic

expressions. The use of parentheses. Especial emphasis given to working within the parentheses. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, simple and complex. Simple equations, both numerical and literal, containing one or more unknown quantities. Systems of equations. Problems depending on linear equations. Involution and evolution of monomials and polynomials. Radicals, including rationalization. Exponents, including the fractional and negative. Imaginary quantities. Elementary treatment of quadratic equations. The solution of simple problems in quadratic equations.*

II. Algebra. One and one-half units.—In addition to Paragraph I, the following: The completion of quadratic equations, both numerical and literal. A standard form for the solutions of these equations. The discriminant condition for equal roots, real and imaginary roots. Relations among the roots and the co-efficients of the equation. The nature of the roots when the different co-efficients approach zero. Simultaneous quadratic equations. Systems of equations, simple and quadratic. Property of quadratic surds and solution of equations containing radicals. Problems leading to quadratic equations. Ratio and proportion. The binomial theorem for positive integral exponents.

III. Algebra. Two units.—In addition to the work outlined in Paragraphs I and II, the following: Convergence of infinite series. Binomial theorem with fractional negative exponents. Exponential and logarithmic series. Formation of logarithms to base e, to base 10. Properties and application of logarithms. The progressions. Continued fractions.

IV. Plane Geometry. One unit.—The work required in Plane Geometry is practically the equivalent of the first five books in Sanders', Wells', or Wentworth's Geometry. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of lines and plane surfaces.

V. Solid Geometry. One-half unit.—The usual theorems and constructions found in good text-books. Emphasis should be given to the demonstration of original problems and the solution of

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* It is assumed that the pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Familiarity with the metric system is pre-supposed. Some of these problems should be chosen from mensuration, from physics and from commercial life. The use of graphic methods and illustrations, particularly in connection with the solution of equations, is also expected. On the other hand, the student must be guarded against the tendency to become mechanical in his algebraic work. Algebra is not to be used as a T-square. Above all, the student should be thoroughly grounded in the fundamental principles, operations and definitions. It is recommended that Wells's Academic Algebra, Wentworth's Algebra, or an equivalent be used.

original exercises, including loci problems. Application to the mensuration of surfaces and solids.

VI. Plane Trigonometry. One-half unit.—Definitions and relations of the six trigonometric functions as ratios, not as lines. Circular measurement of angles. Proofs of principal formulas, in particular those for the sine, cosine and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expression for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

VII. Trigonometry. One unit.—In addition to Paragraph VI, the following: Solutions of triangles, right-angled and oblique, requiring a knowledge of logarithms. Application to heights and distances. Demoivre's Theorem. Properties of spherical triangles. Formulas connecting the sides and angles of spherical triangles. Napier's Analogies. Gauss' Theorem. Solution of spherical triangles.

PHYSICS

One unit.—The candidate must be well prepared in the elementary theory of the subject and must present a note-book showing the quantitative work done by him in the laboratory. One full year of four to five periods a week is necessary to meet the requirements for one unit.

The instruction in the class-room should include qualitative lecture-room experiments, the solution of numerous problems, and the study of some one standard text-book.

Every candidate for admission on examination is required to present a laboratory note-book, signed by the teacher, containing the results of quantitative experiments performed by him in the laboratory. At least thirty quantitative experiments must have been performed, of which ten must be in mechanics, and which must also include three of the subjects, light, heat, electricity, and sound. The thirty experiments are to be selected from some standard list such as the list adopted by the National Education Association, which may be found in *The Teaching of Chemistry and Physics*, Smith and Hall, Chapter X.

Laboratory note-books will be examined for neatness, language, accuracy, and proficiency in physics. They should be called for within one month after presentation.

CHEMISTRY

One unit.—The student's preparation should consist of an elementary course in chemistry (one year)* of the character taught in the better class of high schools. It should include:

* The course should cover from thirty-five to forty weeks, with four to five periods per week. Two hours of laboratory work count as one period of recitation.

(a) Individual laboratory work, to the extent of at least one-third of the time;

(b) Instruction by lecture table demonstration, to be used when expensive apparatus or superior skill in manipulation is indispensable;

(c) The study of at least one standard text-book, to the end that the pupil may gain a connected view of the subject.

Either in the class-room or by experimental treatment in the laboratory, the course should take up for consideration the important modes of occurrence, the principal methods of preparation, the essential physical and chemical properties, and the recognition of the elementary substances and their chief compounds, commonly considered in the standard text-books. More detailed study should be given to those of frequent occurrence, or of especial scientific importance.

At the time of and as part of the examination in chemistry, every student must present a note-book, containing a description of at least forty experiments. The note-book should include drawings of essential pieces of apparatus used, and an index of the experiments. The laboratory note-book should be called for within one month after presentation.

Text-books recommended: McPherson and Henderson, Alexander Smith, Hessler and Smith, and Remsen (Briefer Course). Other texts than the one prescribed should be available to the student for reference. Ostwald's *Conversations on Chemistry* will be found stimulating and suggestive for collateral reading.

ZOOLOGY

One unit.—The candidate will be required to present his original note-book of practical laboratory study, together with the dates and the endorsement of his teacher, certifying that the book is a true record of the pupil's own work. The note-book should contain carefully labeled outline drawings of the chief structures studied in at least fifteen different animals, together with notes on the same. The note-book will be graded as one-third of the examination. The student will be expected to know the classification of animals into phyla and classes, and he must be able to state the chief characteristics and to compare the general life activities of examples of each of the principal classes. He must know the general plan of internal structure of one vertebrate (frog or fish) in general comparison with the human body; an arthropod (crustacean or insect); an annelid (earth-worm or Nereis); a coelenterate (hydroid, hydra or sea-anemone); a protozoan (a ciliate and amoeba when possible). A mollusk (clam

or mussel), an echinoderm or a second vertebrate may be substituted for any of the above types. A knowledge of the very general features of cell division, of the cellular nature of germ-cells, and the essentials of embryological development will be expected, as well as some understanding of the main facts involved in the struggle for existence, adaptation to environment and variation of individuals.

One full year of at least five periods a week is necessary to meet the requirements for one unit.

Such books as Colton's *Descriptive and Practical Zoology,* Harvey's *Introduction to the Study of Zoology,* or Kingsley's *Comparative Zoology* cover this ground adequately. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY

One Unit.—At least half of the student's work must have been laboratory or field work, and a note-book containing careful records of personal observations, illustrated by accurate drawings, must be presented.

Bergen, Atkinson, Bessey, Coulter, and Leavitt are representatives of the type of elementary texts accorded recognition. A full year's work is required for one unit of credit.

Important requirements for recognition are as follows: a knowledge of the common plants of the student's locality, including their classification, structural adaptations for local conditions and any relation to human life which they possess, a general understanding of the importance of bacteria and fungi as the cause of disease and the practical measures for their control, and some understanding of heredity, reproduction, and evolution in plants and living organisms.

BOTANY AND ZOOLOGY

One unit.—A unit will be accepted only when Botany and Zoology have each been studied for half a year in one continuous course which extends throughout the year. Such a course will be reckoned as a one-unit course in Biology. A half year of one, independent of the other, will not be accepted. It is strongly recommended that the student devote an entire year to Botany or to Zoology for one unit, instead of combining Botany and Zoology for a single unit.

At least half of the work must have been laboratory work guided by definite directions. A laboratory note-book containing drawings and observations upon at least ten kinds of animals (both vertebrate and invertebrate) and ten kinds of plants (both flowering and non-flowering) must be presented with the certificate of the teacher that

it is the student's own work. The student will be required to answer in writing general questions upon familiar animals, such as the frog, fish, earth-worm, paramoecium, crayfish, etc., and upon common plants, such as the fern, moss, mushroom, and simple flowering plants. In both Botany and Zoology a knowledge of the names and distinguishing characteristics of the different phyla and their classes will be required. The note-book will count for one-third of the work.

PHYSICAL GEOGRAPHY

ONE-HALF UNIT.—The scope of the work required for one-half unit in Physical Geography is represented by the standard modern text-books, some of which are named below. This includes the earth as a whole, atmosphere, ocean and land, with special emphasis on the work of water on the land in making topographic features. Entrance examinations may include simple interpretations of topographic maps, weather maps, and such charts as are given in text-books, the pointing out of features of scientific importance in such pictures as are used in text-books, and simple demonstrations with globes.

Among the high school text-books regarded as suitable are those by Dryer, Tarr, Gilbert and Brigham, Davis, and Arey Bryant Clendennin and Morey.

No student will be admitted to the entrance examination in Physical Geography after he has received credit for any science work in the University.

ASTRONOMY

ONE-HALF UNIT.—The student should be familiar with:

(*a*) Such fundamental notions and definitions as are necessary to locate celestial bodies.

(*b*) The names and positions of the most conspicuous stars and constellations, and be able to trace the positions of the ecliptic across the sky at certain times during the year.

(*c*) The most important facts concerning the form, dimensions, mass, density, rotation and orbital motion of the earth, including seasons, tides, eclipses, and other dependent phenomena; also methods for determining the mass of the earth.

(*d*) The essentials concerning the sun, moon, and planets, including methods for determining their respective distances, motions, etc.

(*e*) The different classes of objects found in the stellar universe—binaries, variable stars, nebulae; also the principles of spectroscopic observation.

Every student should visit a well-equipped observatory at least twice, once during the day to examine the apparatus, and once at night to view the heavens.

HISTORY

I. General History, or Medieval and Modern History. One Unit.—General History: Myers, Barnes, or G. B. Adams (complete); Medieval and Modern History: Munro and Whitcomb, Myers, Thatcher and Schwill, Harding's *Essentials,* or Robinson's *History of Western Europe* (complete).

II. English History. One Unit.—English History: Montgomery, Walker, Andrews, Cheyney, Larned or Wrong (complete). (Where half time is given to this subject a half unit may be offered.)

III. Ancient History. One Unit.—Ancient History: Myers, Seignobos, West, or Wolfson (complete). (Where half time is given to the subject a half unit may be offered.)

IV. American History. One Unit.—American History: Adams and Trent, Channing, Larned, McLaughlin, Montgomery (student's), McMasters, or Hart's *Essentials* (complete).

V. American History and Civics. One Unit.—See list in IV for American History. For Civics, Garner, J. W.: *Government in the United States,* or an equivalent text.

CIVICS

One-Half Unit.—Garner, J. W.: *Government in the United States,* or an equivalent text.

ECONOMICS

Economics. One-half Unit.—This course should consist, primarily, of a study of economic organization, with special reference to the conditions existing in the United States; and, secondarily, to a concrete presentation of economic principles. The student should become familiar with market methods and the rules governing them; the transportation system and the agencies for the public control thereof; the kinds of money in use, their main characteristics, and the conditions of issue; the distinguishing features of the various kinds of banks and the functions performed by them; and labor unions, labor laws, and the machinery for their enforcement. The best results can be obtained by following the topical method, and requiring the student to investigate personally the economic structure of the community in which he lives and its relation to other communities.

COMMERCIAL GEOGRAPHY

One-half unit.—The work of this half-unit should be based on a standard text such as Adams, Robinson, or Gannett, Garrison,

and Houston. The course should include a discussion of (1) the physical and human factors that affect commerce, (2) the chief commodities of commerce, and (3) the resources, development, and trade of the leading commercial nations with emphasis upon the United States. As far as possible, the work should be illustrated by trips to local industries and by specimens of commercial products.

BOOKKEEPING

Bookkeeping. One Unit.—The unit of work in bookkeeping for college entrance should consist of a working knowledge of double entry bookkeeping for the usual lines of business. The student should be able to change his books from individual to partnership, and know the importance of the partnership agreement and its relation to bookkeeping. At least one set of transactions should be kept by single entry, and at least two sets by double entry, in which the uses of the ordinary bookkeeping books and commercial papers should be involved. The student should be drilled in the making of profit and loss statements and of balance sheets and should be able to explain the meanings of the items involved in both kinds of instruments. The work should be done under the immediate supervision of a teacher, and the student should devote an equivalent of at least ten periods (of not less than forty minutes full time) in class each week for one academic year.

Advanced Bookkeeping and Business Practice. One Unit.—The student should be taught the principles of single entry and its relation to double entry. He should be required to change single entry to double entry and be given a thorough drill on standard business forms, such as bills, receipts, checks, notes, etc., also on the use and meaning of business symbols and abbreviations. The student should become acquainted with the bill book and invoice book, and the loose leaf and voucher systems and bookkeeping. Each student should carry on a business of his own, first as an individual, then as a partnership, and finally as a corporation. Credit on this course should mean that the student lacks only age and actual business experience to become a competent bookkeeper. The work should be done under the immediate supervision of a teacher, and the student should devote an equivalent of at least eight periods (of not less than forty minutes full time) in class each week for one academic year.

STENOGRAPHY AND TYPEWRITING

Stenography and Typewriting. One Unit, Two Years.—This work is expected to occupy not less than two periods daily for two years. No credit should be given for either shorthand or type-

writing if taken alone. Nothing but the touch method should be used in typewriting. The essentials are, first, accuracy and speed in taking dictation and transcribing notes; secondly, correct spelling, capitalization, punctuation, and paragraphing. The minimum speed at the end of the first year should be 75 words per minute in dictation and 25 words per minute on the machine, and at the end of the second year, 100 words per minute in dictation and 35 words per minute in transcribing notes.

COMMERCIAL LAW

One-Half Unit.—The purpose of the law course is to give the students as clear an understanding as possible of their legal rights and limitations in the ordinary business relations of life; some attention is given to the fundamental concepts which underlie all law, rights, duties, wrongs, and remedies. The principal subjects included in the course are Contracts, Negotiable Paper, Agency, Partnership, Corporations, Real Property, Personal Property, Deeds, and Mortgages. Gano's *Commercial Law* is a suitable text.

DRAWING

One unit.—One unit for entrance will be allowed for Freehand Drawing or Mechanical Drawing, or both. The student must have done the equivalent of at least two years' work of not less than four periods a week of forty-five minutes each.

The work in Freehand Drawing should include outline drawing from models, principles of light and shade, application of conventional forms, ornaments, design, etc.

The course in Mechanical Drawing should cover lettering, simple geometric problems, projections, solution of problems of helix, cycloid, parabola, etc.

The candidate for admission on examination must present at the time of, and as a part of, his examination a full set of drawings, with the teacher's certificate that they are the candidate's work.

MANUAL TRAINING

Manual Training Including Shop Work and Mechanical Drawing.—Credit will be allowed in this subject to the extent of from one to four units according as one, two, three, or four years are devoted to the work; but it must be done in accordance with the regulations governing laboratory work; that is, twice the time must be given to the subject each week as is given to a regular academic subject.

The course must include carpentry, wood turning, pattern

making, foundry work, forging, and machine work, and the proper courses in drawing must accompany such work.

The candidate for admission on examination must present at the time of, and as part of his examination, a certified list of courses completed by him, the drawings for the same, and such statements of his work as will give an adequate idea of the efficiency of the course.

DOMESTIC SCIENCE

One to four units of credit is allowed in this subject according as one, two, three, or four years are given to the work; but it must be done in accordance with the regulations governing laboratory work; that is, twice the time should be given to this work each week as is given to the academic studies which it displaces. The course should include the drawing and art work which usually accompany a first-class course in this subject. The first two years should include a study of textiles, drafting of patterns, and the making of dresses, and the designing and construction of hats. The last two years of work should consist of the study of cooking, chemistry of foods, home construction and sanitation, dietetics, food adulteration, bacteriology, laundering, decorating, and home economics.

ADMISSION ON CERTIFICATE FROM ACCREDITED SCHOOLS

Work of satisfactory grade (not lower than 70 per cent) will be accepted from graduates of the University's accredited schools in lieu of the entrance examinations upon the presentation of the proper certificate, signed by the principal of the school, certifying to the work of the candidate. All certificates presented for admission must specify the work actually done, the time devoted to each subject, and the grade received in each course. Blank forms will be furnished upon application to the Director of School Affiliation.

These certificates, properly made out, should be sent to the Director of School Affiliation, University of Cincinnati, Cincinnati, Ohio, as soon as possible after graduation, and at least five days before the first day of registration. Upon receipt of the certificate, the Director of School Affiliation will pass upon the application, and if it is satisfactory, will send a card of admission, which should be presented to the Registrar at the opening of the session. If the certificate is not satisfactory, the candidate will be informed, so that he may prepare himself for the entrance examinations.

A candidate from an accredited school who is not a graduate

of such school will not be admitted upon certificate at all, but must enter by examination in accordance with the rule given above under the heading "Entrance Examinations."

*LIST OF ACCREDITED SCHOOLS

The following preparatory schools and high schools are on the accredited list of the University of Cincinnati. This list is subject to change from year to year, and each school is visited from time to time by a representative of the University:

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* Superintendents or principals who may desire to have their schools accredited by the University, should address the Director of School Affiliation.

CITY	NAME OF SCHOOL	PRINCIPAL
Bellevue, Ky.	High School	*J. W. Ireland
Cincinnati, O.	Oakhurst Collegiate School	Miss H. F. Kendrick
Cincinnati, O.	The Bartholomew Clifton School	Miss E. A. Ely Mary F. Smith
Cincinnati, O.	Franklin School	J. E. White G. S. Sykes
Cincinnati, O.	The College Preparatory School for Girls	Mary Doherty
Cincinnati, O.	Hughes High School	E. D. Lyon
Cincinnati, O.	Walnut Hills High School	‡‡A. T. Henshaw
Cincinnati, O.	Woodward High School	Pliny A. Johnston
Cincinnati, O.	University School	Wm. E. Stilwell
Cincinnati, O.	Ohio Military Institute	*A. M. Henshaw S. P. C. Roberts §C. B. Wood
Cincinnati, O.	Hartwell High School	Arthur Powell
Cincinnati, O.	Madisonville High School	C. M. Merry
Cincinnati, O.	Pleasant Ridge High School	T. L. Simmermon
Covington, Ky.	High School	*H. O. Sluss H. S. Cox
Danville, Ky.	Kentucky College for Women	‡John C. Acheson
Dayton, O.	Steele High School	*E. J. Brown C. L. Loos, Jr.
Delhi, O.	Mt. St. Joseph on the Ohio Academy	Sister Eveline
Glendale, O.	High School	*J. C. Chapin
Glendale, O.	Glendale College	‡Jane R. DeVore
Hamilton, O.	High School	*Darrel Joyce C. H. Lake
Jeffersonville, Ind.	High School	*C. M. Marble Emmett Taylor
Lawrenceburg, Ind.	High School	*J. W. Riddle Lydia A. Sembach
Lebanon, O.	High School	*C. H. Young C. H. Bruner
Lockland, O.	High School	*C. F. Sharp
Ludlow, Ky.	High School	*W. D. Reynolds C. O. Morgan
Maysville, Ky.	High School	*J. W. Bradner Earl F. Chase
Middletown, O.	High School	*N. D. O. Wilson Elsor Heater
Milford, O.	High School	*D. B. Clark J. F. Hardin
Newport, Ky.	High School	*W. P. King Wm. A. Evans
Norwood, O.	High School	*W. S. Cadman W. W. McIntire
Oldenburg, Ind.	Academy of the Immaculate Conception	Sister M. Veronica
St. Bernard, O.	High School	Mr. Trisler
Wyoming, O.	High School	*C. S. Fay Evelyn M. Prichard

* Superintendent § Commandant ‡ President ‡‡ Acting Principal.

LIST OF RECOGNIZED SCHOOLS

The work of the following schools is recognized by the University. Graduates of these schools will be given entrance credit without examination for such work as they have completed in a satisfactory manner:

CITY	NAME OF SCHOOL	PRINCIPAL
Cincinnati, O.....	East Night High School.....	Albert Schwartz
Cincinnati, O.....	West Night High School.....	E. W. Wilkinson
Cincinnati, O.....	St. Mary's, Hyde Park, High School	Rev. P. J. Hynes
Dayton, Ky.....	High School.....	J. M. McVey L. N. Taylor, Supt.
Highlands, Ky.....	High School.....	F. A. Cosgrove
Loveland, O.....	High School.....	John Morris, Supt.
Terrace Park, O.....	High School.....	E. H. Foster
Williamsburg, O.....	High School.....	R. C. Franz

ACCREDITED SCHOOLS OF THE NORTH CENTRAL ASSOCIATION

Graduates of the secondary schools approved by the North Central Association of Colleges and Secondary Schools will be admitted to the University of Cincinnati in accordance with the provision for "Admission on certificate from accredited schools."

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS*

The degree of Bachelor of Arts is the only degree conferred upon graduates of the College of Liberal Arts.

One credit in the scale of University work is a subject taken for one period a week for one semester. In all laboratory courses, two and one-half hours in the laboratory are considered as equivalent to one recitation hour and the preparation therefor. Students who have satisfied the requirements for admission, but who take less than twelve hours per week, are called "irregular students," and they must pay a tuition fee in every instance. (See "Fees.") No student is permitted to elect courses in more than five departments in any one semester.

All students who are candidates for the degree of Bachelor of Arts must fulfill the following requirements:

* The curriculum, as here described, went into effect September 17, 1914.

Each student must obtain 124 credits. Of these credits, 56 to 60 must be taken in prescribed subjects, 4 in physical education, and 30 to 34 under the direction of the student's Adviser in the major groups of studies. The remainder may be freely elected. No student, however, may count toward his 124 credits for graduation more than 6 credit hours of work marked "D," or poor, in any one semester. But this restriction shall not operate to prevent his counting courses so marked toward the completion of his prescribed work.

Prescribed Subjects for Lower Classmen

English	10 to 12 credits
Foreign Languages	12 credits
Laboratory Sciences	10 to 12 credits
History, Economics, Political and Social Science	12 credits
Mathematics, Philosophy, Psychology	12 credits

The above subjects must be completed before the beginning of the Junior year, except that a Sophomore, with the permission of the Advisory Committee and the approval of the Dean, may postpone the performance of not more than 12 credit hours of prescribed work (one-fifth of the total amount) to the Junior year, but only in so far as the prescribed work conflicts with the continuity of studies leading toward the fulfillment of a Major.

Subjects in Major Groups for Upper Classmen

I. Greek, Latin, English, German, French, Italian, Spanish

II. Physics, Chemistry, Zoology, Botany, Geology, Physiology

III. History, Economics, Political and Social Science

IV. Mathematics, Philosophy, Psychology, Astronomy

At the end of the Sophomore year, or at the beginning of the Junior year, each student shall designate one of the following groups from which he must select his major subject. Thereafter, the head of the department in which that subject lies shall act as his Adviser. For graduation, at least 18 credits must be secured in this major subject; and 12 additional credits must be secured in subjects in the same group or in allied subjects specified by the Adviser.

The requirements stated above are illustrated in detail in the following diagrams:

OUTLINE OF STUDIES IN THE COLLEGE OF LIBERAL ARTS

A. B. Degree

120 Academic Credits + 4 Credits in Physical Education

60 Required — 60 Elective

30 Directed — 30 Free

From any subject of the 4 years with whole or reduced credits.

Subjects in Groups	Credit Hours	When Completed
1. Eng. Lang....	10 to 12	1st and 2nd years, except as 12 credits may be deferred to Junior year by permission.
2. Modern & Classical Lang.	12	
3. Natural Sciences.....	10 to 12	
4. Hist., Econ., Polit. and Soc. Sci...	12	
5. Math., Phil. & Psy.....	12	
Phil., Psy., Pol. and Soc. Sci. not open to Freshmen.....	56 to 60	

Major Groups	When Taken
I. Language and Literature. II. Natural Sciences. III. Hist., Econ., Polit. and Soc. Sci. IV. Math., Phil., Psy., and Astron.	3d and 4th years

Major Subject — Major Distributed Credits

18 credits in one department, with head of department as student's Adviser.

12 credits in same group as Major subject or in allied subjects as specified by Adviser.

Freshman Requirements

Prescribed Subjects	Credit Hours a Week per Sem.	Special Regulations
English.....	3	Every Freshman must take English 1
Foreign Language.....	3	
Science or Mathematics.	5 or 3	If a student elects mathematics in place of science, he must elect also either history or economics
History, Economics, or Mathematics.....	3	
Physical Education.....	1	
Total Prescribed Hours.	15 or 13	Maximum hours allowed per semester, 17

Courses Open to Freshmen

Subjects	Courses, Prescribed and Elective	Credit Hours a Week per Sem.
English	English 1, 5	3
	English 3	2
Foreign Language	Latin 1 (after 4 yrs. high school Latin)	3
	Greek 9 (beginners)	3
	Greek 15 (after 1 or 2 yrs. high school Greek)	3
	Greek 1 (after 3 yrs. high school Greek)	3
	Greek 2, 10 (after 3 yrs. high school Greek)	2
	German 1 (beginners)	3
	German 2, 3, 20 (after 2 yrs. high school Ger.)	3
	German 4 (after 4 yrs. high school Ger.)	3
	German 21 (after 4 yrs. high school Ger.)	2
	French 1 (beginners)	3
	French 2 (after 2 yrs. high school French)	3
	French 11 (after 4 yrs. high school French)	3
	Spanish 6 (beginners)	3
	Spanish 9 (after 2 yrs. high school Spanish)	2
	Spanish 14 (after 4 yrs. high school Spanish)	3
Natural Science	Physics, 26a and 2a, 27b and 22b	5
	Chemistry, 1a and 2a, 3b and 4b	5
	Botany, 1a and 2a, 3b and 4b	5
	Zoology, 1a and 2a, 3b and 4b	5
	Geology 1	5
	Astronomy 1b	2
Mathematics	Mathematics 1, 3, 4, 6	3
History	History 1, 13	3
	History 29	2
Economics	Economics 1, 2	3
Physical Education	Physical Education 1	1

Sophomore Requirements

Completion of the Prescribed Work (including 2 credits in physical education), except in so far as such work may be deferred to the Junior year by special permission, as provided above.

Maximum hours allowed, exclusive of physical education, 18 a week.

Junior Requirements

Completion of such Prescribed Work as may have been deferred from the Sophomore year, and the election and pursuit of Major Work.

Maximum hours allowed, 18 a week.

Senior Requirements

Completion of 124 credits, including the fulfillment of the requirement of 30 credits for a Major.

Maximum hours allowed, 18 a week.

Free Electives

At any time during his four years of residence a student may elect any courses then open to him, provided that such electives do not conflict with the performance either of his Prescribed Work or of his Major Work.

A Senior electing courses designed primarily for Freshmen will receive for the same only half credit.

ADVISORY SYSTEM FOR THE ELECTION OF STUDIES

To the Advisory Committee for the Election of Studies is confided the duty of assisting Freshmen and Sophomores in registering for the subjects best adapted to their aims and abilities and of counselling them in all matters affecting scholarship.

Freshman and Sophomore students are required to conform to the following regulations:

For Freshmen

1. Each Freshman at the first semester registration days will be assigned by the Chairman to a member of the Committee, who will act as his temporary Adviser, and assist him in registering;

2. Within one month from this registration, each Freshman must appear before the Chairman of the Committee and be assigned, after consultation, to some member of the Committee who will act as his permanent Adviser;

3. At the second semester registration day, each Freshman will register with his own Adviser;

4. On or before May 1 of the Freshman year, each student will go to his Adviser and, in consultation with him, choose his studies for the Sophomore year. The schedule of studies must then be taken to the Chairman for approval.

For Sophomores

1. In the Sophomore year, each student on the first semester registration days must go to his own Adviser and register in accordance with the schedule of studies chosen in the manner just outlined. If, in the meantime, any changes have been decided upon, he must consult his Adviser and obtain the approval of the Chairman before registering;

2. At the second semester registration day each Sophomore will register with his own Adviser;

3. On or before May 1, each Sophomore must go to his Adviser and, after consultation with him, and with the representative of any department concerned, he must choose his major course of studies for the Junior year;

4. No Sophomore will be allowed to register for Major Work unless he has fulfilled at least four-fifths of the required work of the

Freshman and Sophomore years, and has obtained from the Chairman a certificate to that effect.

Major Advisers

Every student of the Junior and Senior years will register with the head of the department in which he elects his Major, and this person will act through his Junior and Senior years as his Adviser.

SPECIAL ARRANGEMENTS

Credit for Work Done in the College of Law.—A student who has received credit for the work of the first two years in the College of Liberal Arts may, in the third year, elect from four to six hours per semester of the lectures of the first year of the law course, as a substitute for studies in the College of Liberal Arts, and in the following year he may, in the same way, take the remainder of the thirteen hours of the first year's course in the College of Law. Or, if he so desires, he may elect, in his Senior year, the entire thirteen hours of the first year law course (equivalent to twenty-six credit hours in the College of Liberal Arts), provided he has fulfilled all the requirements for obtaining his B. A. degree. Thus a student may obtain both the academic and legal degrees in six years. In either of the above cases, the student will be classified as an irregular student in the College of Liberal Arts, and will be required to pay tuition at the regular rate of three dollars per credit hour per semester.

Six-Year Combined Collegiate and Medical Course.—In this combined course the student takes the first two years of work in the College of Liberal Arts, and the last four in the College of Medicine. At the end of the fourth year, he is granted the degree of B. S., and at the end of the sixth year, the degree of M. D.

Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary.—Arrangements have been made with the Hebrew Union College and with Lane Theological Seminary, whereby students of these institutions who are pursuing a course in the University of Cincinnati may be allowed to count work in Hebrew taken in these institutions for the degree of Bachelor of Arts, to the amount of two hours a week throughout the Freshman and Sophomore years, and three hours a week throughout the Junior and Senior years, for the Hebrew Union College, and three hours per week for three years in Lane Theological Seminary, provided such work is regularly entered upon the election schedules of the University.

Credit for Work Done in the Art Academy of Cincinnati.—By an arrangement with the Art Academy of Cincinnati, students from the University may elect from the courses stated in the catalogue in drawing, modeling, and carving, not more than six hours' work in any one semester, and receive credit therefore on the books of the University, provided these courses have been duly entered on

the election blank and the proper certificate from the Director of the School is presented on their satisfactory completion. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

Credit for Work Done in the College for Teachers.—Certain courses in Education, to the number of twenty-four credits, may be elected by undergraduates during the Senior year and be counted toward fulfilling requirements for the A. B. degree. (This arrangement will be discontinued after June, 1916.)

Special Arrangement with the New York State College of Agriculture of Cornell University

Students who enter the University of Cincinnati without entrance conditions, and who complete satisfactorily the following course in one year, will be admitted directly into the Sophomore class of the New York State College of Agriculture of Cornell University.

Botany 1a, 2a, 3b, 4b	5	credits each semester
Physics 26a, 2a, 27b, 22b	5	" " "
English 1	3	" " "
Economics 1	3	" " "
Physical Education	1	" " "
Total	17	" " "

Upon the satisfactory completion of this first year's work, the student may either enter the Agricultural College or continue for one more year at the University of Cincinnati without delaying his graduation from the Agricultural College, as the above institution has agreed to enroll directly in the Junior class, those students who have completed the first year's course above given, and, in addition, the second year's course as given below.

Botany 5	3	credits per semester
Chemistry 1a, 2a, 3b, 4b	5	" " "
Geology 1	5	" " "
English, French, German, History (One to be chosen)	3	" " "
Physical Education	1	" " "

This arrangement permits the student to enjoy the advantages of work in two institutions without delaying the time required for his professional degree. Similar arrangements are planned with other agricultural colleges of the first rank and will probably be in operation by next year.

Students who are considering the study of agriculture should, before registering, consult with Professor Benedict, Room 28, Cunningham Hall.

COURSES OF INSTRUCTION

ASTRONOMY

JERMAIN GILDERSLEEVE PORTER, PH. D., Director of the Observatory and Professor of Astronomy

For Undergraduates

1b. Descriptive Astronomy.—Lectures and class work. No mathematical training is required beyond a geometrical conception of the sphere and its circles. The object of the course is to give a comprehensive view of astronomy in its historic and practical relations, as well as a general résumé of our knowledge concerning the heavenly bodies. Reference books: *Popular Astronomy,* Newcomb; *Manual of Astronomy,* Young; *The Stars in Song and Legend,* Porter. T., Th., 10:30—11:30, *second semester.* Professor Porter.

For Undergraduates and Graduates

3. Spherical and Practical Astronomy.—Text-books: Campbell's *Elements of Practical Astronomy;* Chauvenet's *Spherical and Practical Astronomy.* Once a week throughout the year.
Professor Porter.

4. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Computation of orbits. Text-books: Watson's *Theoretical Astronomy.* Once a week throughout the year. Professor Porter.

Courses 3 and 4 will ordinarily be given at the Observatory. Hours to be arranged.

BIBLICAL LITERATURE

EDWARD MACK, A. M., D. D., . . Lecturer on Biblical Literature.

For Undergraduates and Graduates

8a. The Literature of the Old Testament: Studies in the history of the ancient Hebrews, and the development of their literature, with special consideration of the poetical passages and books. *First semester,* T., Th., 11:30-12:30. Dr. Mack.

9a. Studies in the Prophets of the Old Testament; the institutions of the Old Testament, the social life of the people, and the messages of the Prophets. *First semester,* T., 1:00-3:00.
Dr. Mack.

8b. The Literature of the New Testament; in its relation to the books of the Old Testament; the historical setting and antecedents; the Acts and the Epistles studied comparatively. *Second semester,* T., Th., 11:30-12:30.

9b. The Social Teachings of Jesus and the Apostles.—Their teachings with regard to the nature of man, his individuality and responsibility; the family, rights of children, divorce; society, the method of its improvement; the state and our relations to it; wealth, the rich and the poor, "the social question." *Second semester,* T., 1:00-3:00. Dr. Mack.

BOTANY

HARRIS MILLER BENEDICT, Ph. D., ... Professor of Botany.
LEVI ALEXANDER GIDDINGS, M. S., ... Instructor in Botany.
E. LUCY BRAUN, Ph. D., ... Graduate Assistant in Botany.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students contemplating training in agriculture at Cornell or other agricultural colleges should, after consultation with the head of this department, register for Courses 1a to 4b.

Students who desire to be recommended as teachers of botany in secondary schools must complete as a minimum, Courses 1a to 4b inclusive, and Course 5. It is very desirable that they also do at least one year of graduate work.

For Undergraduates

1a. Plant Biology.—A course of lectures and discussions on the nature, origin, and evolution of life, and on the laws which control growth, development, reproduction, and heredity. The applications of these principles to the specific economic problems of plant culture, plant breeding, soil fertility, and sanitation are emphasized throughout. This course must be taken in connection with Course 2a. *First semester,* M., W., F., 8:30-9:30. Professor Benedict.

Course 1a is required as a prerequisite to all other courses in botany and agriculture.

2a. Experimental Plant Biology.—Experimental investigation of the basic biological problems. The results of these experiments serve as the basis for the discussion of biological principles and economic applications in Course 1a.

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.

Professor Benedict and Mr. Giddings.

3b. Plant Biology.—A continuation of Course 1a. Among the topics studied are the characteristics of different groups of plants, the representatives of the latter in the local flora, and their distri-

bution in relation to the laws of ecological succession. The origin, evolution, and distribution of plants of economic value are studied. This course must be taken with Course 4b. *Second semester,* M., W., F., 8:30-9:30. Professor Benedict.

4b. Plant Biology, Laboratory.—Laboratory and field study of the wild and cultivated plants of this region including their variation and distribution. This course must be taken with Course 3b.

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.
Professor Benedict and Mr. Giddings.

5. City Botany.—Two field trips and one lecture per week on the flora of the city. Since the trees and shrubs constitute the dominant type of vegetation, their study will occupy most of the time, and the course will therefore be largely city forestry. The lecture will be given during one of the trips. M., W., 1:00-4:00. Throughout the year. Professor Benedict.

Course 5 is required of all who desire the recommendation of the department to teach botany or biology in secondary schools or nature-study in elementary schools. It is also required in the second year of the pre-agricultural course. Open to those who have passed in Courses 1a-4b.

[11. Sanitary Biology.] Lectures on the biological principles involved in sanitary engineering, designed to enable the engineer to solve local problems in sanitation and to appreciate the significance of specialists' reports. M., 2:00-3:00, throughout the year.

Course 9 is open to all students. Professor Benedict.
Omitted in 1915-16.

12b. Field Ornithology.—A field study of the identification, classification, songs, and habits of our native birds. One laboratory period per week during the second semester. S., 6:00-9:00 A. M.
Professor Benedict.

For Undergraduates and Graduates

6a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 7a. *First semester,* M., 1:00-2:00.
Professor Benedict.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

7a. Plant Histology Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawings and descrip-

tions will be required. Work on textile fibres and the identification of food adulterations will be included. This course must be taken in connection with Course 6a. *First semester,* M., 2:00-4:00; W., 1:00-4:00. Professor Benedict.

8b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 9b. *Second semester,* M., 1:00-2:00. Professor Benedict.

Prerequisite: Courses 6a and 7a.

9b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 8b. *Second semester,* M., 2:00-4:00; W., 1:00-4:00. Professor Benedict.

10. Special Problems.—Senior students who have completed three years of work in Botany, and who have shown exceptional ability, may choose a special problem for investigation, after consultation with the head of the department. The work may be taken as a two or a three-hour course at a time to be determined by conference. Professor Benedict.

Primarily for Graduates

20. Current Problems in Botany.—Lectures and discussions upon present problems in plant physiology. A reading knowledge of French or German is required. Two credit hours.
Professor Benedict.

Prerequisite: Courses 1a, 2a, 3b, 4b, 5, 6a, 7a, 8b, 9b.

21. Research.—Credit according to number of hours elected.
Professor Benedict.

CHEMISTRY

Lauder William Jones, Ph. D., ... Professor of Chemistry.
Harry Shipley Fry, Ph. D., . Associate Professor of Chemistry.
Henry Max Goettsch, Ph. D., Assistant Professor of Industrial Chemistry.
Ernest E. Thum, E. M., . . Assistant Professor of Metallurgy.
Albert Watson Davison, Ph. D., Instructor in Physical Chemistry.
Edwin W. Esslinger, A. M., . Instructor in Analytical Chemistry.
Ray Gould Knickerbocker, B. S., . . . Instructor in Metallurgy.
Leonora Neuffer, A. M., ... Assistant in Chemistry.

For Undergraduates

1a. General Inorganic Chemistry.—The Non-metals. This course gives a definite idea of the fundamental laws of general chemistry, and furnishes a survey of the important facts concerning the chemistry of the non-metals and their compounds. Lectures, recitations, and quizzes illustrated by experiments, charts, and specimens. Course 2a forms an integral part of, and must accompany Course 1a. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

2a. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week. *First semester.* Experiments complementary to the subject-matter of Course 1a.

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Associate Professor Fry and Assistants.

3b. General Inorganic Chemistry.—The Metals. A continuation of Course 1a. The properties of the metals and their compounds. Three hours per week. *Second semester.* Students who have completed Courses 1a and 2a are eligible for this course. It must be accompanied by Course 4b. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

4b. General Inorganic Chemistry Laboratory.—Two laboratory exercises per week. *Second semester.* Experiments complementary to the subject-matter of Course 3b.

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Associate Professor Fry and Assistants.

5a. Qualitative Analysis.—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis will be laid upon the application of the laws of chemical equilibrium, and the theories of solutions and of electrolytic dissociation to the practical problems of the analyst. Three exercises a week. *First semester.* M., W., F., 8:30-9:30. Professor Jones.

Prerequisite: Courses 3b and 4b.

6. Qualitative Analysis Laboratory.—To accompany Course 5a. During the first few weeks of the semester the student will perform important tests commonly used in the processes of analytical chemistry. The later work of the course will furnish abundant training in the qualitative examination of salts, minerals, alloys, etc. Two exercises a week, *first semester;* two laboratory periods and one quiz period, *second semester.*

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Professor Jones and Mr. Esslinger.

7. Quantitative Analysis.—An introductory laboratory course in gravimetric and volumetric analysis. Occasional conferences are held, at which analytical methods and calculations are discussed, and at which reports are submitted covering assigned reading. Three exercises a week. *First or second semester.* M., W., 1:00-4:00; F., 2:00-5:00.

Mr. Esslinger (first semester); Dr. Davison (second semester).

Prerequisite: Courses 5a and 6 (first semester).

8b. Elementary Organic Chemistry.—Three exercises a week. *Second semester.* Quizzes and lectures which are experimental, covering the chief classes of organic compounds of both the aliphatic and aromatic series. This course is arranged to meet the needs of those who intend to specialize in chemistry, in medicine, or in biology. It serves as a general introduction for those who intend to go deeper into the study of organic chemistry. M., W., F., 8:30-9:30.

Prerequisite: Courses 3b and 4b. Professor Jones.

9b. Organic Reactions and Preparations.—Laboratory practice to accompany the lectures of Course 8b. *Second semester.* Sec. I, M., W., 1:00-4:00; Sec. II, T., Th., 1:00-4:00.

Professor Jones, assisted by Miss Neuffer.

Prerequisite: Courses 3b and 4b.

14b. Metallurgy.—Five credit hours per week. *Second semester.* A study of fuels, refractories, ferrous and non-ferrous metallurgy, and practice in metallurgical calculations. Emphasis is laid upon foundry and steel works processes. Excursions will be made to metallurgical establishments in Cincinnati and vicinity. M., T., W., Th., 9:30-10:30; M., 1:00-4:00.

Assistant Professor Thum and Mr. Knickerbocker.

Prerequisite: Courses 5a, 6, and Physics 1.

15b. Assaying.—One afternoon a week. *Second semester.* Laboratory practice in the fire assay of ores and base metals for gold, silver, and lead. Hours to be arranged. Mr. Knickerbocker.

Prerequisite: Course 7b.

[16a. Technical Inorganic Chemistry.] Three periods a week. *First semester.* M., W., F., 9:30-10:30.

Assistant Professor Goettsch.

Prerequisite: Courses 5a and 6.

Omitted in 1915-16.

17. Technical Analysis.—The course consists of analyses of typical industrial products, involving the use of gravimetric, volumetric, gasometric, electrolytic, and colorimetric processes. T., Th., 1:00-4:00; F., 2:00-5:00. May be taken either semester, or both semesters. Two or three credit hours.

Assistant Professor Goettsch, assisted by Mr. Esslinger.

Prerequisite: Course 7b.

18b. Technical Organic Chemistry.—M., W., F., 8:30-9:30. Assistant Professor Goettsch.

Prerequisite: Courses 8a, 9a, and 16a.

29a. Practical Photography.—One lecture and one laboratory period a week. *First semester.* The course embraces a study of the exposure and development of photographic plates; the treatment of defective negatives; the preparation and use of various printing papers; copying, enlarging, and lantern-slide making. W., 8:30-9:30; F., 2:00-5:00. Assistant Professor Goettsch.

Prerequisites: Courses 1, 2, 3b, and 4b.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. Special topics and recent theories of inorganic chemistry, including colloids, reactions in non-aqueous solvents; inactive gases; radioactive elements and emanations; the electron; valence, structure, and co-ordination theories. T., Th., 8:30-9:30. Associate Professor Fry.

Prerequisite: Courses 5a, 6, and 7b.

11. Inorganic Preparations.—Two or three laboratory exercises a week. *First and second semesters.* Experiments supplementary to the subject-matter of Course 10a. Hours to be arranged.

Prerequisite: Course 7b. Associate Professor Fry.

12a. Physical Chemistry.—Lectures and recitations. Three exercises a week. *First semester.* An introductory course which considers the general properties of gases, liquids, solids and solutions, as well as the principles determining reaction velocity and the equilibria in homogeneous and heterogeneous systems. M., W., 11:30-12:30; F., 1:00-2:00. Dr. Davison.

Prerequisite: Chemistry 5a, 6a, and 7b, Physics 26a and 27b, Mathematics 5.

13b. Physical Chemistry Laboratory.—Two exercises a week. *First semester.* Designed to illustrate the principles developed in Course 12a, and to provide a knowledge of the common methods used in physical-chemical measurements. This course must accompany Course 12a. Th., 1:00-4:00; F., 2:00-5:00. Dr. Davison.

32b. Electrochemistry.—Lectures and recitations. Three exercises a week. *Second semester.* A general consideration of the electrical properties of matter with special reference to the theory of aqueous solutions. T., Th., S., 11:30-12:30. Dr. Davison.

Prerequisite: Course 12a.

33b. Electrochemistry Laboratory.—Two exercises a week. *Second semester.* Determination of conductivity with its application,

transference numbers, electromotive force, dielectric constant, etc. Th., 1:00-4:00; F., 2:00-5:00. This course accompanies Course 32b.
Dr. Davison.

34a. Colloid Chemistry.—A discussion of the theory and methods of formation of colloidal solutions, emulsions, gels, and suspensions; followed by the applications of colloid chemistry to the arts. *First semester.* Three lectures per week. Hours to be arranged.

Prerequisite: Courses 12a and 13a. Dr. Davison.

[41a. Phase Rule.] Lectures and recitations. A study of the phase rule and its applications. Two exercises a week. *First semester.* Hours to be arranged. Dr. Davison.

Prerequisite: Course 12a.

Omitted in 1915-16.

20. Advanced Organic Chemistry.—Three lectures and conferences a week, embracing a systematic study of the principles and practices of organic chemistry, and treating of the modes of formation, properties, reactions, and constitutional formulae of typical members of the most important classes of organic compounds. Hours to be arranged. Professor Jones.

Prerequisite: Courses 5a, 6, 7, 8b, 9b, and a reading knowledge of German and French.

21. Advanced Organic Chemistry Laboratory.—Practice in the preparation of a number of typical organic compounds. This course will require considerable reading in the journals of chemistry and in various hand-books and works of reference. Credit according to number of hours elected. May be taken either first or second semester, or both semesters. Professor Jones.

Prerequisite: As in Course 20.

24b. History of Chemistry.—Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. Three exercises per week. *Second semester.* Hours to be arranged.
Associate Professor Fry.

Prerequisite: Courses 5a, 6, 8b and 9b, or 20b and 21.

[28b. Elementary Spectrum Analysis (Qualitative).] The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic

substances are studied from the chemist's point of view. Two laboratory periods a week. *Second semester;* hours to be arranged.

Professor Jones.

Prerequisite: Courses 5a, 6, 8b, and 9b; Physics, 1 year.
Omitted in 1915-16.

Primarily for Graduates

30. Research.—This course requires intensive laboratory work under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d).

Professor Jones, Associate Professor Fry,
Assistant Professor Goettsch, Assistant Professor Thum.

During the summer of 1915, students engaged in research may enroll in the Graduate School.

35a. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases are presented in detail. Topics for consideration will be chosen each year from the following: Optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; tautomerism; the electronic conception of valence; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpenes; the polypeptides, proteins; the organic dyes, etc. *Second semester.* Two hours a week, to be arranged. Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

Frederick Charles Hicks, Ph. D., Sinton Professor of Economics and Commerce.

James Dysart Magee, Ph. D., ... Instructor in Economics.

Students desiring a general knowledge of economics are recommended to take Course 1 or Courses 1 and 2.

For Undergraduates

1. Economics.—This course is intended to give the student a general view of the subject. It includes a study of (1) the elements of economics: wealth, value, price, competition, monopolization, production, and distribution; (2) the evolution of industry from local organization and control during the middle ages, through nationalism and the industrial revolution, to modern conditions; and (3) the leading economic problems of today. M., W., F., 9:30-10:30. Professor Hicks.

2. Economic History.—A study of industrial development since the tenth century, including the economic history of the United States. Subjects considered: the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times. T., Th., 10:30-11:30. Dr. Magee.

For Undergraduates and Graduates

[15a. Railroads.] This course includes a study of the place of transportation in economic development; a brief description of the early technical development of the railroad; a history of the railroad development in the United States; and a discussion of the problem of governmental regulation of railroads. M., W., F., 10:30-11:30. Dr. Magee.

Prerequisite: Course 1.

Omitted in 1915-16.

[15b. Tariffs.] The course begins with a study of the theory of international trade. It considers in some detail the tariff history of the United States, including the actual course of the duties and the arguments urged at the various times in favor of the different policies. Also the present tariff situation in England, France, and Germany is treated. M., W., F., 10:30-11:30. Dr. Magee.

Prerequisite: Course 1.

Omitted in 1915-16.

16a. Money and Banking.—The elementary principles of money and banking are considered, together with the monetary history of the United States. In the discussion of banking, the history of the United States is treated in some detail. In the case of Germany, France, and England, the history is outlined briefly

and the present situation discussed more fully. M., W., F., 10:30-11:30. Dr. Magee.

Prerequisite: Course 1.

16b. Labor.—The subjects treated in this course include: the development of the Trade Union; the forms of organization and federation; the aim and policies of Trade Unions; the legal aspects of Unionism; governmental regulation of working conditions; employers' associations; and methods of industrial peace. M., W., F., 10:30-11:30. Dr. Magee.

Prerequisite: Course 1.

Primarily for Graduates

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist mainly of a comparison of the views of representative economists. T., Th., 9:30-10:30. Professor Hicks.

Evening Courses

32. Economics (Similar to Course 1).—W., 7:30-9:30. Professor Hicks.

[33. Economic History (Similar to Course 2).] W., 4:45-6:45. Omitted in 1915-16. Dr. Magee.

30. Commercial Geography.—A study of the leading articles of commerce, including both raw materials and manufactured products, their character and relative importance, the principal sources of supply, and their distribution in the world's markets. W., 4:45-6:45. Dr. Magee.

31. Statistics.—The principles of the statistical method and their application to social and economic problems. M., 4:45-6:45. Dr. Magee.

[34a. Railroads (Similar to Course 15a).] W., 7:30-9:30. Prerequisite: Course 32. Dr. Magee. Omitted in 1915-16.

[34b. Tariffs (Similar to Course 15b).] W., 7:30-9:30. Prerequisite: Course 32. Dr. Magee. Omitted in 1915-16.

35a. Money and Banking (Similar to Course 16a).—W., 7:30-9:30. Dr. Magee.

Prerequisite: Course 32.

35b. Labor (Similar to Course 16b).—W., 7:30-9:30. Prerequisite: Course 32. Dr. Magee.

* EDUCATION

For a complete list of courses in Education, see Announcement of the College for Teachers.

Candidates for the A. B. degree may count Education 1 or Education 9 and 11, to be taken in the Junior or Senior year, in partial fulfillment of the requirements for this degree.

Those students who wish both an A. B. degree and a Teacher's Diploma, must earn the latter by not less than a year's resident work in the College for Teachers, after completing the requirements for the A. B. degree.*

Those students who wish to qualify in four years for teaching in elementary schools, will spend the first two years in the College of Liberal Arts and the last two years in the College for Teachers, receiving, at the end of the four-year period, the degree of Bachelor of Science conferred upon the recommendation of the Faculty of the College for Teachers.

For full information, including statements in detail concerning the requirements for those who wish to prepare for various positions in educational work, see Announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature**)

FRANK WADLEIGH CHANDLER, PH. D., Professor of English and Ropes Professor of Comparative Literature.
EMILIE WATTS McVEA, A. M., Assistant Professor of English.
BENJAMIN CARLTON VAN WYE, A. M., Assistant Professor of Public Speaking and of English.
CLYDE WILLIAM PARK, A. M., . . Assistant Professor of English.
BERTHA K. YOUNG, A. M., . . . Assistant Professor of English.
CLARENCE DIMICK STEVENS, A. M., Assistant Professor of English.
WALTER WESLEY PLOCK, A. M., ... Instructor in English.
HELEN STANLEY, A. M., ... Assistant in English.
MADELAINE MAURY WRIGHT, A. B., ... Assistant in English.
CLARENCE L. FERNBERG, A. M., ... Assistant in English.

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* This requirement does not affect students who expect to graduate in June, 1916. Such students may qualify under the old arrangement for both an A. B. degree and a Teacher's Diploma, counting courses in education to the extent of twenty-four credits for the A. B. degree.

** During the year 1915-16, public lectures in the field of comparative literature, under the auspices of the Ropes Foundation, will be given by visiting professors of note as heretofore; moreover, in the list of courses below, those marked with an asterisk are essentially courses in the comparative field.

All students in English, before making their election of courses, are advised to consult with some member of the department, and to read carefully the departmental bulletin of information as to the proper sequence in which such courses should be taken.

No student should enter or withdraw from a two-semester course at the beginning of the second semester without first consulting both the instructor concerned and the head of the department.

Students majoring in English are required to take as part of their course either 7 or 10.

For Undergraduates

1. English Composition and Literature.—A course in the principles and practice of effective writing, in connection with a study of English prose. Six or more sections: M., W., F., 10:30-11:30.
Assistant Professors McVea, Van Wye, Park, Young, Stevens, and Mr. Plock.

Course 1 is required for all students in the College of Liberal Arts in the Freshman year.

A passing grade received in this course may at any time lapse into a "condition," upon recommendation of the Department of English, or upon the joint recommendation of the English Department and any other department of the College of Liberal Arts. A condition thus incurred may be removed only at the examination period next ensuing, and if not removed within one semester, it will lapse into a failure. The method of removing the condition will be determined by the English Department according to the individual case; but, in any event, it must include a written test.

2a. Argumentation.—*First semester,* T., Th., 8:30-9:30.
Assistant Professor Van Wye.

2b. The Forms of Public Address.—*Second semester,* T., Th., 8:30-9:30. Assistant Professor Van Wye.

Courses 2a and 2b are intended to serve as preparation for debating and effective public speaking. They are recommended for Sophomores and for those who may become candidates for the Jones prizes.

25. Public Speaking.—Control of the voice and body, correct enunciation, and practice in effective expression.
Sec. I, T., Th., 10:30-11:30.
Sec. II, T., Th., 11:30-12:30. Assistant Professor Van Wye.

Course 25 counts as only one University credit for the first semester. It is recommended for students who expect to take Course 13a.

13a. Debating.—*First semester.* T., 1:00-3:00.
Assistant Professor Van Wye.

Course 13a is open to students who have passed creditably in Courses 1 and 2a. Students interested in public speaking are advised to take Courses 2a and 2b one year, and Course 13 the next.

15b. Descriptive and Narrative Writing.—T., Th., 11:30-12:30.
Assistant Professor McVea.

Course 15b is open to Sophomores and Juniors. Seniors will receive but half credit for it.

3. Types of Literature.—An appreciative rather than an historical study of the principal literary kinds—lyric, narrative verse, drama, prose fiction, and essay—illustrated by readings in representative masterpieces, chiefly English. Lectures, class papers, discussions. T., Th., 9:30-10:30. Professor Chandler.

Course 3 is recommended for Freshmen and Sophomores only. Juniors and Seniors will receive but half credit for it.

5. Shakespeare.—A study of the life and times of Shakespeare, his dramatic methods, and the literary history of his plays. Some of the plays are examined in detail, and most of the others are assigned for reading. M., W., F., 9:30-10:30.
Assistant Professor Young.

Course 5 is open to Freshmen and Sophomores.

11. The English Novel.—A course which considers the origin and history of the English novel, and discusses its characteristics as a form of prose literature. M., W., F., 9:30-10:30.
Assistant Professor Stevens.

Course 11 is recommended for Sophomores and Juniors.

18. American Literature.—A general survey of the development of literature in America, with especial attention to Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, Whittier, and Whitman. T., Th., 1:00-2:00. Assistant Professor McVea.

6. Victorian Poetry.—A study of the poetical works of Tennyson, Browning, Arnold, Rossetti, and Swinburne; involving a discussion of their technic, art, growth of mind, general interpretation of life, and relation to their time. M., W., F., 8:30-9:30.
Assistant Professor McVea.

For Upper-Classmen and Graduates

7a. Old English Prose.—An elementary reading course in Old English. *First semester,* M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

8b. Old English Poetry.—*Beowulf* or some other long poem, supplemented by readings in the history of Old English literature. *Second semester,* M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

10. Chaucer.—The work and influence of Chaucer: his times, sources, contemporaries, and immediate successors, studied chiefly from the literary point of view. T., Th., S., 9:30-10:30.
Assistant Professor Stevens.

*17. Studies in the Lyric.—An examination of European lyrical poetry as to typical moods and forms. Only those who satisfy the instructor of their ability to write fair verse may take this course. Two hours, to be arranged. Professor Chandler.

*24. Recent European Drama.—A study of the new dramatic literature, its varieties, technic, aims, and problems, beginning with the later plays of Ibsen, and considering the art and thought of such other representative writers for the stage as Björnson, Hauptmann, Sudermann, Schnitzler, Maeterlinck, Hervieu, Rostand, D'Annunzio, Echegaray, Strindberg, Tchekhov, Pinero, Jones, Phillips, Synge, and Shaw. T., Th., 1:00-2:00. Professor Chandler.

12. Literary Composition.—A study of the various prose literary forms, from the point of view of original composition. Only those who satisfy the instructor of their ability to write well are admitted to this course. T., Th., 11:30-12:30. Assistant Professor McVea.

21. English Poetry from Spenser to Burns.—A study of the development of English poetry, exclusive of the drama, from the beginning of the Elizabethan Age through the eras of Milton and Pope to the close of the eighteenth century. T., Th., 10:30-11:30.
Assistant Professor Stevens.

26. The Essay.—A consideration of the origin and history of the English essay, involving a study of the rise of periodical literature and some reading of foreign examples of the type. M., W., 1:00-2:00. Assistant Professor Park.

*28. English Poetry and Its Continental Relations from 1780-1830. A study of the chief poets of the romantic movement, and of the foreign influences that affected them. W., 4:00-6:00
Professor Chandler.

For Graduates Only

*20. Seminary.—Literary Criticism.—A survey of European theories of literature with especial attention to those of the nineteenth century. T., 4:00-6:00. Professor Chandler.

For Teachers

For courses available for teachers see Courses 19 and 20, the evening courses, and Course 29 described below:

29. Materials and Methods in Secondary English.—The organization and adaptation of the work in composition and literature to meet the needs of pupils in the secondary schools. A course designed for (1) seniors and graduates intending to teach English

in secondary schools, (2) teachers in elementary schools preparing to teach secondary English, and (3) teachers in secondary schools already engaged in the teaching of English. S., 9:30-11:30.
Assistant Professor Young.

Courses Regularly Given, But Omitted During 1915-16

4. Nineteenth Century Prose.—M., W., F., 1:00-2:00.
Assistant Professor Young.

16. Wordsworth and His Contemporaries.—M., W., F., 8:30-9:30. Professor Chandler.

14. English Drama from Its Origins to 1642.—T., Th., 9:30-10:30. Assistant Professor Stevens.

27. English Drama Since the Restoration.—M., W., 1:00-2:00; F., 2:00-3:00. Assistant Professor Park.

*19. Elizabethan Literature in Its Continental Connections.—W., 4:00-6:00. Professor Chandler.

*22. Foreign Backgrounds of English Literature.—T., Th., 2:00-3:00. Professor Chandler.

*23. The Literary Movement of the Eighteenth Century.—W., 4:00-6:00. Professor Chandler.

Evening Courses

30. English Composition and Literature.
Sec. I, Th., 7:30-9:30. Assistant Professor Park.
Sec. II, T., 4:45-6:45. Assistant Professor Stevens.

[31. Nineteenth Century Poetry.]
Omitted in 1915-16. Assistant Professor Young.

32. Nineteenth Century Prose. T., 7:30-9:30.
Assistant Professor Young.

33. Public Speaking. M., 7:30-9:30.
Assistant Professor Van Wye.

GEOLOGY AND GEOGRAPHY

*Nevin M. Fenneman, Ph. D., Professor of Geology and Geography.
J. Ernest Carman, B. S., M. Di., Assistant Professor of Geology.
Walter H. Bucher, Ph. D., ... Instructor in Geology.
Otto Charles von Schlichten, A. B., . . Instructor in Geology. (ad interim.)

For Undergraduates

1. Introduction to the Earth Sciences.—Minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean; followed by a brief study of the physiography

* Absent on leave, 1915-16.

of the United States. Lectures, M., W., F., 8:30-9:30; laboratory, M., W., 2:00-5:00; T., Th., 9:30-12:30; T., Th., 2:00-5:00; T., Th., 1:00-4:00.

Assistant Professor Carman, Dr. Bucher, and Assistant.

2. Engineering Geology.—An introductory study of minerals and rocks, dynamic geology and topography, followed in the second semester by stratigraphic, structural, and economic geology. T., Th., F., 9:30-10:30; M., W., 9:30-11:30. Mr. von Schlichten.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure; special attention given to the economic deposits of each period. Frequent local (half-day) excursions noting fossils, stratigraphy, physiography, and economic relations. Lectures, T., Th., 8:30-9:30; laboratory, M., 2:00-5:00. Course 1 is prerequisite.

Assistant Professor Carman.

Geology 9 is accepted as graduate work by agreement with the professor in charge. In 1915-16 it may be taken as a two-hour course without laboratory or a three-hour course with laboratory.

14. Course 14 is outlined under the heading "For Teachers." Open to college students only by special agreement with the professor in charge.

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit according to number of hours elected. Course 1 is prerequisite.

Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Two lectures and one laboratory. Hours to be arranged.

Mr. von Schlichten.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized. T., Th., 8:30-9:30; F., 2:00-5:00. Dr. Bucher.

* Course 1 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major, unless Course 1 or its equivalent has been taken.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Two or three hours, to be announced. Course 7 is prerequisite. Mr. von Schlichten.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to number of hours elected.

Course 16 is outlined under the heading "For Teachers."

Course 20 is outlined under the heading "For Teachers."

For Teachers

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lecture, S., 8:30-10:30; field or laboratory, 10:30-12:30. Dr. Bucher.

19. Historical Geology.—For teachers who have had Course 14. Lectures, S., 8:30-10:30; field or laboratory, 10:30-12:30. Assistant Professor Carman.

[16. Advanced Physiography of the United States.] Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

Omitted in 1915-16.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

20. Physiography of Europe.—Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lecture, W., 4:00-6:00. Dr. Bucher.

GERMAN

Max Poll, Ph. D., . . . Professor of the Germanic Languages.
Claude M. Lotspeich, Ph. D., . Associate Professor of German.
Eleanor Nippert, A. B., ... Instructor in German.
Martin Ludwich, A. M., ... Instructor in German.
Walter Bucher, Ph. D., ... Instructor in Geology.

Assistant: ———.

For Undergraduates

1. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 9:30-10:30.
Sec. III, M., W., 1:00-2:00; F., 2:00-3:00.
Associate Professor Lotspeich and Miss Nippert.

Course 1 is open to students who have had no German in the high school.

2. German Prose and Poetry.—Reading at sight, grammar, composition, and dictation.
Sec. I, M., W., F., 8:30-9:30.
Sec. II, T., Th., S., 9:30-10:30.
Sec. III, M., W., F., 10:30-11:30.
Associate Professor Lotspeich and Miss Nippert.

Course 2 is open to students who have passed in Course 1 or who have had two years of German in the high school.

Course 2 does not count towards a major in German.

20. German Scientific Prose.—Subjects in natural science. T., Th., 11:30-12:30. Dr. Bucher.

Course 20 is open to students who have passed in Course 1 or its equivalent. Course 20 does not count towards a major in German. If taken after Course 2, Course 20 will count only as a half course.

3. German Composition (Beginners' Course).—German grammar, conversation, and practice in writing German. T., Th., 10:30-11:30. Miss Nippert.

Course 3 is open to students who have passed in Course 1. Courses 2 and 3 may be advantageously taken together.

**4. Introduction to German Literature of the Eighteenth Century.—Lessing's *Emilia Galotti,* Schiller's *Jungfrau von Orleans* and *Maria Stuart,* Goethe's *Iphigenie, Egmont, Tasso* and *Goetz von Berlichingen.* Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted mainly in German.
Sec. I, M., W., F., 10:30-11:30.
Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.
Professor Poll, Miss Nippert, and Assistant.

Course 4 is open to students who have passed in Course 2. Students in this course are urged to take a composition course in addition.

21. German Composition (Intermediate Course).—Practice in composition, conversation and in writing German. T., Th., 9:30-

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** Students entering the University who have done advanced work in German may anticipate this course by passing an examination on the work as outlined above, within three weeks after matriculation.

10:30. Course 21 is open to students who have passed in Course 2. Miss Nippert.

Courses 4 and 21 may be advantageously taken together.

[14b. Advanced German Reading.] The material for study will be selected from such works at Goethe's *Dichtung und Wahrheit,* Schiller's *Geschichte des dreissigjährigen Krieges,* Lessing's *Laokoon* and *Hamburgische Dramaturgie,* Biedermann's *Deutsche Bildungszustände in der zweiten Hälfte des Achtzehnten Jahrhunderts. Second semester,* T., Th., 11:30-12:30.

Associate Professor Lotspeich.

Course 14b is open to students who have either completed or are taking Course 4 or Course 5.

Omitted in 1915-16.

15b. Phonetics and Linguistics.—A general introductory course intended for students of all the language departments. A study of the organs of speech and the fundamental principles of phonetics, and an analysis of the sounds of English, German, and French, chiefly from the point of view of the practical teachings of modern languages. An introduction to the science of language; different types of languages; the chief characteristics of the Indo-European group; growth of language; sound-changes; word-formation; semasiology, etc. This course is conducted in English. It is open to Juniors, Seniors, and Graduates, with the permission of the instructor. *Second semester,* T., Th., 11:30-12:30.

Associate Professor Lotspeich.

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with special study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1915-16: *An Anthology of German Literature,* by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan;* Schiller's *Wallenstein* and *Braut von Messina,* and Goethe's *Faust.* Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll and Assistant.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth Century.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00.

Professor Poll.

Course 6 is open to students who have passed in Course 5.

10. German Composition (Advanced Course).—Advanced composition and practice in writing German. S., 10:30-12:30.

Professor Poll.

[30. Glimpses of German Life and Culture.] Papers and discussions in German. Advanced composition. S., 10:30-12:30.
Omitted in 1915-16. Professor Poll.

Primarily for Graduates

12. Interpretation of both parts of Faust and Study of the Legend.—Collateral reading and written reports. T., 4:00-6:00.
Professor Poll.

Course 12 is open to students who have passed in Course 5.

[11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.] Lectures in German and collateral reading. *Second semester,* T., 4:00-6:00. Professor Poll.

Course 11b is open to students who have passed in Course 5 or 6.
Omitted in 1915-16.

7. Middle High German.—Wright's *Middle High-German Primer.* Bachmann's *Mittelhochdeutsches Lesebuch.* Translation into modern German. M., 4:00-6:00.
Associate Professor Lotspeich.

[8. Old High German.] Braune's *Althochdeutsche Grammatik,* and the same author's *Althochdeutsches Lesebuch* are used as textbooks. Translation into modern German. During a part of the second semester the Old Saxon phonology and morphology will be studied and selections from the Heliand will be read. M., 4:00-6:00.
Omitted in 1915-16. Associate Professor Lotspeich.

[13. Gothic.] Braune's *Gotische Grammatik;* reading of selections from Ulfilas, lectures on Germanic philology. W., 4:00-6:00.
Omitted in 1915-16. Associate Professor Lotspeich.

[26. Old Norse.] Heusler's *Altislaendisches Elementarbuch.* Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. M., 4:00-6:00.
Omitted in 1915-16. Associate Professor Lotspeich.

[9b. German Seminary.] Willem's *Van den vos Reinaerde. Second semester.* T., 4:00-6:00. Professor Poll.
Omitted in 1915-16.

For Teachers

Courses 10 and 30, outlined above, are intended primarily for teachers.

Evening Courses

33. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German. W., 7:30-9:30. Mr. Ludwich.

34. Intermediate German, Prose and Poetry.—Translation, sight reading, grammar, composition, dictation. T., 7:30-9:30.
Associate Professor Lotspeich.

35. Introduction to German Literature of the Eighteenth Century.—Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted in German. W., 7:30-9:30. Professor Poll.

GREEK

JOSEPH EDWARD HARRY, PH. D., ... Professor of Greek.
ARTHUR JAMES KINSELLA, A. M., ... Instructor in Greek.

For Undergraduates

1. Oratory—Epic Poetry—Philosophy.—Lysias, six orations; Herodotus, one book; *Iliad,* Books XIX-XXII.

The Lyric Poets.—Selections. Plato: *Protagoras; Lysis; Laches; Charmides.* Collateral reading: two orations of Lysias; two books of the *Iliad;* Plato's *Apology* and *Crito.* M., W., F., 9:30-10:30, throughout the year. Professor Harry.

A collateral course is offered by Mr. Kinsella for those students who are unable to attend at this hour.

Course 1 is open to students who have had three years of Greek in the high school.

2. Greek Prose Composition.—Hour to be arranged.
Mr. Kinsella.

Course 2 should be taken in connection with Course 1.

Course 2 is open to students who have had three years of Greek in the high school.

3. The Drama.—Euripides, *Hippolytus;* Sophocles, *Oedipus Tyrannus;* Aeschylus, *Prometheus;* Aristophanes, *Nubes.* Collateral reading—Euripides: *Alcestis, Ion.* M., W., F., 10:30-11:30, throughout the year. Professor Harry.

Course 3 is open to students who have completed Course 1.

4. The Odyssey.—Two hours weekly; to be arranged.
Mr. Kinsella.

8. The Life and the Literature of the Ancient Greeks.—Greek Life, *first semester.* Homer, *second semester..* Th., 10:30-11:30.
Professor Harry.

Students who are not acquainted with the Greek language may be admitted to Course 8.

9. Elementary Greek.—First Greek book and grammar. Xenophon. M., W., F., 8:30-9:30. (See also Course 17.)
Mr. Kinsella.

Course 9 is open to students who have had no Greek in the high school.

[10. The New Testament.] A course in grammar and translation. Two hours; to be arranged with the instructor. Throughout the year. Mr. Kinsella.

Course 10 alternates with Course 16.

Course 10 is open to students who have had three years of Greek in the high school.

Omitted in 1915-16.

21. Practical Exercises in Attic Greek.—F., 3:00-4:00. Professor Harry.

12. Xenophon's *Hellenica, first semester. Symposium, Memorabilia, second semester.* T., Th., 10:30-11:30. Mr. Kinsella.

15. Intermediate Greek.—Completion of Xenophon. Prose Composition. Homer, I-III. M., W., 11:30-12:30; F., 1:00-2:00. Mr. Kinsella.

Prerequisite: Course 9 or two years of Greek in the high school.

16. Hellenistic Greek.—Philo and other writers of this period. Two hours throughout the year; to be arranged with the instructor. Course 16 alternates with Course 10. Mr. Kinsella.

17. First Year Greek.—T., Th., S., 11:30-12:30. This course is offered to give those who cannot take Course 9 an opportunity to begin the study of Greek in the University. Professor Harry.

20a. Greek Mythology.—A lecture course with collateral reading. *First semester.* T., Th., 9:30-10:30. Mr. Kinsella.

20b. Greek Religion.—Cults of the various states. Lectures and collateral reading. *Second semester.* T., Th., 9:30-10:30. Mr. Kinsella.

Students who are not acquainted with the Greek language may be admitted to Courses 20a and 20b.

For Undergraduates and Graduates

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Sculpture, vase paintings, coins, gem engraving, wall paintings (1915-16). T., 10:30-11:30.

This class is limited to forty students. Professor Harry.

Primarily for Graduates

5. Rapid Reading.—Th., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—M., 3:00-5:00. Professor Harry.

7. Greek Seminary.—Tragedy and Comedy (1915-16). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

HISTORY

MERRICK WHITCOMB, PH. D., ... Professor of History.
ISAAC JOSLIN COX, PH. D., . . . Associate Professor of History.
DEXTER PERKINS, Ph. D., ... Instructor in English History.
MIRIAM URBANSKY, ... Assistant in History.
——— ———, ... D. A. R. Fellow in American History.

For Undergraduates

1. Middle Ages—Renaissance.—Reformation.—This course includes the main facts of European history from the fall of the Roman Empire to the end of the Reformation. Lectures and recitations. M., W., F., 9:30-10:30. Professor Whitcomb.

3. The Revolution and Napoleon.—Beginning with the Bourbon period this course includes a study of the Ancien Régime and the French Revolution, and follows the fortunes of Napoleon to 1815. Lectures and recitations. M., W., F., 10:30-11:30. Professor Whitcomb.

13. General Course in English History.—This course is introductory to the study of both European and American history. It traces the development of the English people from the earliest times to the present. Lectures and recitations. M., W., 1:00-2:00; F., 2:00-3:00. Dr. Perkins.

29. Ancient History to 476, A. D.—This course comprises a brief survey of the development of the principal Oriental nations; and a more complete discussion of the civilizations of Greece and Rome. T., Th., 8:30-9:30. Dr. Perkins.

15. General Course in American History.—This course is especially recommended for those who contemplate work in the College for Teachers. It should, if possible, be preceded by History 1 or History 13. The work is based largely upon a text-book, supplemented by regular reports and lectures. M., W., F., 8:30-9:30. Associate Professor Cox.

For Undergraduates and Graduates

2. The Renaissance in Italy and Germany.—An advanced course covering the period 1300-1500. Knowledge of medieval history is a prerequisite. T., Th., 9:30-10:30. Professor Whitcomb.

[25. European History since 1814.] An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question. T., Th., 10:30-11:30.

Omitted in 1915-16. Professor Whitcomb.

46. History of Germany.—Beginning with the early Germans, this course will follow the history of the German peoples down to the present time. T., Th., 10:30-11:30. Professor Whitcomb.

Open to Seniors; to Juniors by permission.

20. Spain and Spanish America.—A brief view of the development of Spain and the Spanish colonies; the subsequent development of the political and commercial relations of Latin America with Europe and the United States. Lectures and special reports. T., Th., 1:00-2:00. Associate Professor Cox.

27. Recent History of the United States.—A brief review of the Civil War and Reconstruction followed by a study of present day topics. M., W., 11:30-12:30. Associate Professor Cox.

[28. American Territorial History.] A general view of the territorial development of North America with the United States as its chief factor. Emphasis will be given to Spanish-American relations between 1803 and 1823. Lectures and special reports. T., Th., 11:30-12:30. Associate Professor Cox.

Omitted in 1915-16.

35. History of the Trans-Allegheny Region.—A survey of the exploration and settlement of this region, and its political development to the Civil War. S., 9:30-10:30.

Associate Professor Cox.

Open to teachers and advanced students.

39. Seminary in American History.—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. S., 10:30-12:30.

Associate Professor Cox.

Open to properly qualified teachers.

Evening Courses

57. European History since 1814 (Similar in scope to History 25).—W., 7:30-9:30. Professor Whitcomb.

[47. General Course in American History.] The work of this course covers the Colonial and Revolutionary Periods and is based largely upon a text-book, supplemented by regular reports and lectures. Th., 7:30-9:30. Associate Professor Cox.

Omitted in 1915-16.

48. General Course in American History (Continued).—The work of this course covers the period from 1789 to the present time, and is conducted in the same manner as Course 47. Th., 7:30-9:30. Associate Professor Cox.

LATIN

JOHN MILLER BURNAM, PH. D., ... Professor of Latin.
WILLIAM TUNSTALL SEMPLE, PH. D., Assistant Professor of Latin.
HELEN ABIGAIL STANLEY, A. M., . . Graduate Assistant in Latin.

For Undergraduates

1. Livy.—Horace.—Selections from Livy. Selected Odes and Epodes of Horace. Informal discussion of the life and thought of the times.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 8:30-9:30.
Sec. III, M., W., F., 9:30-10:30.

Professor Burnam,
Assistant Professor Semple, and Miss Stanley.

Course 1 is open to students who have had four years of Latin in the high school.

2. Cicero, Tacitus, Horace.—Cicero's *Laelius,* Tacitus' *Agricola* and *Germania,* selections from Horace's Satires and Epistles.

Sec. I, M., W., F., 10:30-11:30.
Sec. II, T., Th., S., 9:30-10:30. Assistant Professor Semple.
Course 2 is open to students who have completed Course 1.

6. Prose Composition.—One hour per week throughout the year. T., 10:30-11:30. Assistant Professor Semple.

Course 6 is required of all students who choose Latin as a major. It may be taken any year after the completion of Course I.

3. Comedy.—Plautus and Terence, *first semester;* Lucretius' *De Rerum Natura, second semester.* M., W., 11:30-12:30; F., 1:00-2:00. Assistant Professor Semple.

Course 3 is open to students who have passed in Courses 1 and 2.

4. Cicero de Oratore or Brutus, *first semester;* Tacitus' Annals or Quintilian, *second semester.* Three hours, to be arranged.

Professor Burnam.

Course 4 is open to students who have passed in Courses 1 and 2.

5. Latin Literature.—A general survey of the life and letters of the Roman people from the earliest times until the later Empire. Th., 10:30-11:30. Assistant Professor Semple.

7. Lectures on Special Topics.—Hours and amount of credit to be arranged. Professor Burnam.

8. Latin Teaching.—Practical exercises in teaching secondary Latin. S., one hour, to be arranged.

Assistant Professor Semple.

Primarily for Graduates

Hours in all cases to be arranged

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A. D. 1 to the close of the fifteenth century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a. Caesar. Three hours.
10b. Cicero. Omitted in 1915-16.
10c. Virgil. Omitted in 1915-16.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1915-16 (Course 10a) is Caesar. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

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*MATHEMATICS

Harris Hancock, Ph. D., D. Sc., . . . Professor of Mathematics.
Stephen Elmer Slocum, Ph. D., Professor of Applied Mathematics.
Charles Napoleon Moore, Ph. D., Assistant Professor of Mathematics.
Louis Brand, A. M., . . . Assistant Professor of Mathematics.
Florence Cameron Lawler, B. S., . . Instructor in Mathematics.
Joseph Henry Kindle, A. M., . . . Instructor in Mathematics.
Edward Smith, M. S., ... Instructor in Mathematics.

For Undergraduates

1. Algebra, Trigonometry.—Selected portions of Algebra and the elementary Theory of Equations. Rietz and Crathorne, *College Algebra;* Trigonometry, Crockett, *Trigonometry.*

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* See other courses in Mathematics and Applied Mathematics, College of Engineering.

Sec. I, M., W., F., 8:30-9:30. Miss Lawler.
Sec. II, M., W., F., 9:30-10:30. Miss Lawler.
Sec. III, M., W., F., 10:30-11:30. Miss Lawler.

Beginning September 15, 1914, students who matriculate with *less than three units* in Mathematics, and who elect Mathematics, *must* take Course 1.

6. Algebra.—Analytical Geometry of Two Dimensions. T., Th., S., 9:30-10:30. Miss Lawler.

4. Trigonometry and Analytics.—T., Th., S., 8:30-9:30. Miss Lawler.

Beginning September 15, 1914, students who matriculate with *three or more units* in Mathematics, and who elect Mathematics, *must* take Course 6 or 4.

3. Analytical Geometry of Two and Three Dimensions. M., W., F., 9:30-10:30. Assistant Professor Moore.

Sophomores who have taken Course 1, and Freshmen, who enter *with four units* in Mathematics, may (by special permission) take Course 3.

5. Calculus. Differential and Integral.—Osborne, *Calculus;* Davis, *Calculus.*

Sec. I, M., T., Th., F., 10:30-11:30. Professor Hancock.

For Undergraduates and Graduates

8a. Advanced Integral Calculus.—Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.* Professor Hancock.

9b. Differential Equations.—Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.* Professor Hancock.

[15. Theory of Equations, Including Determinants.] Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 9:30-10:30. Professor Hancock.

Omitted in 1915-16.

Primarily for Graduates

25. Elliptic Functions.—M., Th., 4:00-6:00. Professor Hancock.

11b. Fourier's Series and Spherical Harmonics.—Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with

applications to problems in heat, electricity, potential, elasticity, etc. *Second semester,* Th., 4:00-6:00; S., 9:30-10:30.

Professor Slocum.

10a. Theory of Errors and Method of Least Squares.—Wright and Hayford, *Adjustment of Observations.* The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. *First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to number of hours elected. Hours by special arrangement. Professor Slocum.

The following courses which are given from time to time will be omitted in 1915-16:

16a. Theoretical Mechanics.

16b. The Mathematical Theory of Elasticity.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.

26. The History and Teaching of Mathematics.

30. Theory of Numbers, Part I.—Natural Numbers.

31. Theory of Numbers, Part II.—Algebraic Numbers.—Dedekind's Theory.

32. Theory of Numbers, Part III.—Kronecker's Theory.

24. Elliptic Functions, Part I.—Analysis.

36. Vector Analysis

28. Theory of Functions.—Lectures on the Theory of Functions of a Complex Variable.

29. Theory of Functions of a Real Variable.

33. Advanced Algebra.—Part I. Lectures.

34. Advanced Algebra.—Part II.

35. Advanced Algebra.—Part III.

18a. Theory of Minimal Surfaces.

Evening Courses

40. Algebra—Trigonometry.—Selected portions of algebra and the elementary Theory of Equations. Ashton and Marsh, *College Algebra.* Trigonometry: Rothrock, *Trigonometry.* F., 7:30-9:30.

Mr. Kindle.

42. Analytical Geometry and Elementary Calculus. W., 7:30-9:30. Mr. Smith.

PHILOSOPHY

GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.
HENRY G. HARTMANN, Ph. D., . Assistant Professor of Philosophy.

For Undergraduates

1a. Introduction to Philosophy.—Open to students who have completed one year of University work. *First semester,* M., W., F., 10:30-11:30. Assistant Professor Hartmann.

1b. Philosophical Idealism Historically and Critically Treated.—*Second semester,* M., W., F., 10:30-11:30.
Assistant Professor Hartmann.

2a. Introduction to Logic.—Open to students who have completed at least one year of University work. *First semester,* M., W., F., 9:30-10:30. Professor Tawney.

For Undergraduates and Graduates

2b. Theory of Scientific Method.—*Second semester,* M., W., F., 9:30-10:30. Professor Tawney.
Prerequisite: Course 2a.

[3a. History of Philosophy from the Italian Renaissance to the Time of Kant.] *First semester,* M., W., F., 8:30-9:30.
Omitted in 1915-16.

[3b. History of Modern Philosophy from the Time of Kant.] *Second semester,* M., W., F., 8:30-9:30.
Omitted in 1915-16.

4a. History of Philosophy to the Beginning of the Christian Era.—Open to students who have completed one year of University work. *First semester,* M., W., F., 8:30-9:30. Professor Tawney.

4b. History of the Philosophy of the Middle Ages.—Courses 4a and 4b alternate biennially with Courses 3a and 3b. *Second semester,* M., W., F., 8:30-9:30. Professor Tawney.
Prerequisite: Course 4a.

5a. Ethics.—Open to students who have completed two years of University work. *First semester.*
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Hartmann.

5b. Ethical Interpretations.—*Second semester.*
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.
Prerequisite: Course 5a. Assistant Professor Hartmann.

[6a. History of Ethics.] *First semester,* T., Th., 11:30-12:30. Prerequisite: Course 5a. Assistant Professor Hartmann
Omitted in 1915-16.

[6b. History of Moral Ideas.] *Second semester,* T., Th., 11:30-12:30. Assistant Professor Hartmann.
Prerequisite: Course 5a.
Omitted in 1915-16.

8a. Social Psychology.—See Psychology 8a. This course counts toward a major in philosophy. Assistant Professor Hartmann.
Prerequisite: Psychology 1a and 1b.

8b. Aesthetics, the Theory of Art and the Beautiful.—*Second semester,* M., W., F., 9:30-10:30. Assistant Professor Hartmann.
Prerequisite: Psychology 1a and 1b.

11. Contemporary Philosophy.—S., 9:30-10:30.
Prerequisite: Philosophy 3b. Professor Tawney.

Primarily for Graduates

16. Locke, Berkeley, and Hume.—Th., 1:00-3:00.
Assistant Professor Hartmann.

10. Types of Philosophical Realism Historically and Critically Treated.—T., 1:00-3:00. Professor Tawney.

For Teachers

11. Contemporary Philosophy.—S., 9:30-10:30.
Professor Tawney.

Evening Courses

[22. Logic.] Th., 4:45-6:45. Assistant Professor Hartmann.
Omitted in 1915-16.

23. Ethics.—M., 7:30-9:30. Professor Tawney.

24. Introduction to Philosophy.—Th., 4:45-6:45.
Assistant Professor Hartmann.

It should be remembered that work in the Department of Philosophy is facilitated by courses in psychology, sociology, political science, general history, economics, the history of education, aesthetics, and other allied subjects dealing with human life and the products of civilization.

PHYSICAL EDUCATION

Alfred Brodbeck, ... Director of Physical Education.
——— ———, ... Instructor in Physical Education.
Harold H. Wagner, ... Assistant in Physical Education.

Physical Training for Men.—All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: Three hours per week for all members of the Freshman class (lectures on hygiene, one hour, work in the gymnasium, two hours), and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A physical examination is required of each student of the two lower classes upon entrance and upon completion of the required work. Appointments for the examination must be made with the Physical Director at the beginning of the first semester.

Credit: One credit will be given for each semester's work.

Gymnasium sections for men meet as follows:

Phys. Ed. 1 (Freshmen).—Sec. I, M., W., 11:30-12:30.
Sec. II, T., Th., 11:30-12:30.
Sec. III, T., Th., 4:00-5:00.
Hygiene lecture, F., 3:00-4:00.

Phys. Ed. 2 (Sophomores).—Sec. I, M., W., 10:30-11:30.
Sec. II, T. Th., 10:30-11:30.
Sec. III, T., Th., 4:00-5:00.
Mr. Brodbeck.

Special Classes.—Boxing, T., 4:45-5:15; fencing, Th., 4:30-5:00.

Physical Training for Women.—The work is arranged with a view to obtaining the best hygienic, corrective and recreative results. A physical examination will be made at the beginning of the Freshman and at the end of the Sophomore year.

The course for Freshmen consists of three hours attendance per week throughout the year. Two hours each week are spent in exercising in the gymnasium; the other hour is devoted to lectures on hygiene. The lectures must be attended by every member of the Freshman class, irrespective of the fact that she may be excused from the gymnasium work.

The course for Sophomores consists of two hours of exercise in the gymnasium, prescribed for all members unless excused by the Director of Physical Education or on a physician's certificate.

Credit: One credit will be given for each semester's work.

Gymnasium sections for women meet as follows:

Phys. Ed. 1 (Freshmen).—Sec. I, M., W., 1:00-2:00.
Sec. II, T., Th., 1:00-2:00.
Hygiene lecture, F., 3:00-4:00.

Phys. Ed. 2 (Sophomores).—Sec. I, M., W., 2:00-3:00.
Sec. II, T., Th., 2:00-3:00.

Voluntary Class.—F., 1:00-2:00. ————.

PHYSICS

Louis Trenchard More, Ph. D., ... Professor of Physics.
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics.
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics.
Thomas Lansing Porter, Ph. D., ... Instructor in Physics.

Assistants: Mr. Evens, ————.

For Undergraduates

26a. General Physics.—Lectures and recitations on mechanics, sound, and heat, illustrated with lecture experiments. *First semester,* M., W., 11:30-12:30; F., 1:00-2:00. Professor More.

27b. General Physics.—Lectures and recitations on light, electricity and magnetism, illustrated with lecture experiments. *Second semester,* M., W., 11:30-12:30; F., 1:00-2:00. Professor More.

N. B.—The above courses are designed for students in the College of Liberal Arts only; they may be elected in the Freshman year. They will present the fundamental laws and phenomena of physics, and will be non-mathematical in treatment. Taken with Courses 2a and 22b, Experimental Physics, they satisfy the science requirement.

2a. Experimental Physics.—Laboratory work arranged to accompany General Physics. *First semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.

Sec. II, T., Th., 1:00-4:00.

Sec. III, M., F., 1:00-4:00 (for Engineers only).

Sec. IV, W., 1:00-4:00.

22b. Experimental Physics.—Laboratory work arranged to accompany General Physics. *Second semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.

Sec. II, T., Th., 1:00-4:00.

Sec. III, M., W., F., 1:00-4:00 (for Engineers only).

28a. Advanced General Physics.—Lectures and recitations on Mechanics and Heat. *First semester.* T., Th., 9:30-10:30.

Associate Professor Allen.

29b. Advanced General Physics.—Lectures and recitations on light, electricity, and magnetism. *Second semester.* T., Th., 9:30-10:30. Associate Professor Allen.

Prerequisites for Courses 28 and 29 are Courses 26 and 27, and Mathematics 1.

4a. Intermediate Experimental Physics.—Laboratory experiments in electricity and magnetism with instruments of precision. T., Th., 1:00-4:00. Associate Professor Allen.

4b. Intermediate Experimental Physics.—Laboratory experiments in sound, heat, and light. T., Th., 1:00-4:00.

Associate Professor Allen.

Courses 4a and 4b are arranged to accompany Courses 28a and 29b.

For Undergraduates and Graduates

32b. Philosophy of Science.—A course of lectures on the fundamental ideas of science. The purpose of the course is to give a survey of the most important epochs of science and of the growth of the scientific method. The problems discussed will not be limited to physics; no mathematics required. Open to all students, above the Sophomore year, who have had a course in any science. Twice weekly. Professor More.

3a. Theoretical Mechanics.—A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30.

Professor More.

18b. Theory of Electricity and Magnetism.—A course of lectures on the mathematical laws of electricity and magnetism. *Second semester,* T., Th., S., 11:30-12:30. Professor More.

[19a. Theory of Heat.] A course of lectures on the mathematical laws of heat. *First semester,* T., Th., S., 11:30-12:30.

Omitted in 1915-16. Professor More.

[15b. Theory of Light.] A course of lectures on the mathematical laws of light. *Second semester,* T., Th., S., 11:30-12:30. Omitted in 1915-16. Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Advanced Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit according to number of hours elected. Associate Professor Allen.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-5:00. Associate Professor Allen.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Without credit. Mr. Evens.

For Graduates Only

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1913-14 the lectures discuss the theory of heat and generalized co-ordinates; 1914-15, electricity and magnetism; 1915-16, light. Twice weekly. Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a. Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Daily. Professor More and Associate Professor Allen.

For Teachers Only

11. Laboratory Methods for Teachers.—This course comprises a set of experiments designed especially for teachers. The exercises will include those which are usually given in schools, and also those of a more difficult nature which illustrate the theoretical principles. S., 8:30-11:30. Dr. Porter.

Evening Courses

30a. General Physics.—Lectures with demonstrations on mechanics, heat, and sound. *First semester,* M., 7:30-9:30. Associate Professor Allen.

30b. General Physics.—Lectures with demonstrations on light, electricity, and magnetism. *Second semester,* M., 7:30-9:30. Associate Professor Allen.

31a. Experimental Physics.—Laboratory work to accompany General Physics. *First semester.* Sec. V, W., 7:30-9:30.
Dr. Porter.

31b. Experimental Physics—Laboratory work to accompany General Physics. *Second semester.* Sec. V, W., 7:30-9:30.
Dr. Porter.

POLITICAL AND SOCIAL SCIENCE

SELDEN GALE LOWRIE, Ph. D., . . Professor of Political Science.
CLARENCE ORAN GARDNER, Ph. D., Assistant Professor of Political Science.
WILLIAM HAMMOND PARKER, Ph. D., Assistant Professor of Economics and Social Science.
DEXTER PERKINS, Ph. D., ... Instructor in History.

POLITICAL SCIENCE

1. American Government.—The primary aim of this course is to prepare for the duties of citizenship and lay a foundation for the further study of political science. The nature and organization of our federal government will be studied the first semester, and state and local government will be studied the second semester. M., W., F., 10:30-11:30. Assistant Professor Gardner.

For Undergraduates and Graduates

2a. International Law.—A study of the principles, rules, and customs controlling the states of the civilized world in their relation to each other. *First semester,* M., W., 11:30-12:30; F., 1:00-2:00.
Professor Lowrie.

Open to Juniors and Seniors and to those students taking Course 1.

2b. European Governments.—A study of the nature and organization of the principal governments of Europe. *Second semester,* M., W., 11:30-12:30; F., 1:00-2:00. Assistant Professor Gardner.

Open to Juniors and Seniors and to those students taking Course 1.

[6a. Public Finance and Taxation.] An introductory course in the principles of taxation and the methods of levying and collecting taxes. Also a study of the budget systems of the countries of the world as well as of states and cities. *First semester,* T., Th., 8:30-9:30. Professor Lowrie.

Open to Juniors and Seniors and to those students who have taken Economics 1.

Omitted in 1915-16.

9b. American Diplomacy.—This course will deal with certain selected questions from the history of American diplomacy with a view to the determination and elucidation of the principles of international law. Among the topics touched on, will be the recognition of the South American states; the questions connected with the Panama Canal; various phases of the Monroe Doctrine; and the most notable boundary arbitrations. *Second semester,* T., Th., 11:30-12:30. Dr. Perkins.

11a. Municipal Government.—A comparative study of municipal organization and administration in the United States and in European countries. *First semester,* M., W., F., 8:30-9:30. Assistant Professor Gardner.

11b. Municipal Functions.—A study of the activities of the modern city. Special attention will be given the problems involved in the contemporary development of Cincinnati. This course will be given in co-operation with the Municipal Reference Bureau. *Second semester,* M., W., F., 8:30-9:30. Professor Lowrie.

[4b. Political Parties and Party Methods.] A study of the theory and organization of political parties in the United States with particular reference to party methods and machinery. *Second semester,* T., Th., 8:30-9:30. Assistant Professor Gardner.

Omitted in 1915-16.

17a. Constitutional Law.—A study of the American Constitution, and its development through judicial interpretation. *First semester,* T., Th., 8:30-9:30. Assistant Professor Gardner.

Open to those who have had Course 1.

19b. Public Utilities.—A study of public regulation and public and private ownership of municipal public utilities in the American states and in foreign countries. The subject considered will include the constitutional and judicial limitations to be observed in the regulation of utilities, reasonable rates and service, and the political and social aspects of the question. *Second semester,* T., Th., 8:30-9:30. Assistant Professor Gardner.

Primarily for Graduates

25. Seminar in Municipal Government.—A study will be made of the functions of a modern city with special reference to Cincinnati. Given in co-operation with the Municipal Reference Bureau. M., 4:00-6:00. Professor Lowrie.

Open to those who have had Courses 11a and 11b, and to others by permission.

3. Political Theory.—The first semester of this course will be devoted to a study of the development of ancient, medieval, and

modern political thought, including a brief survey of American theory. The work of the second semester will consist principally of an analysis and criticism of various political concepts, such as the origin, nature, and functions of the state; sovereignty; government; liberty, etc. Either semester may be taken separately. Open to Seniors and graduate students. T., Th., 1:00-2:00.

Assistant Professor Gardner.

Evening Courses

[30. Municipal Government.] A study of the organization, power, and functions of American municipalities, together with a brief survey of the governments of modern English, French, and Prussian cities. Throughout the course special emphasis will be placed upon the operation of city government, with particular reference to contemporary government in Cincinnati. M., 7:30-9:30.

Omitted in 1915-16. Assistant Professor Gardner.

31. American Government.—The scope of this course is practically the same as that of Course 1 as described above. M., 7:30-9:30. Assistant Professor Gardner.

32. Public Finance and Taxation.—An introductory course in the principles of taxation and the methods of levying and collecting taxes. Also a study of modern budget systems. T., 7:30-9:30.

Prerequisite: Economics 1. Professor Lowrie.

SOCIAL SCIENCE

For Undergraduates

5. Elementary Sociology.—An introductory course designed to present a working theory of the nature of society, the prevailing types of social organizations, and the larger problems connected therewith. The nature of sociology, facts of social evolution, social control, social organization, social ideals, social pathology, methods of social investigation, and the history of sociology. T., Th., 9:30-10:30. Assistant Professor Parker.

For Undergraduates and Graduates

7. Modern Social Theories.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, Small, and others. Particular attention is given to the development of social theory and to the consequences of the theories of these writers in the field of practical social reform. M., W., 10:30-11:30. Assistant Professor Parker.

15. Modern Philanthropy.—A study of the problems of charity. Treatment of the pauper, feeble-minded, insane, and of dependent children. Reform suggestions regarding the best methods of dealing with these classes. As an integral part of this course there will be a series of lectures on the scope and method of the work of the Associated Charities, the Department of Charities and Corrections of the City of Cincinnati, the House of Refuge, the Juvenile Court, the Juvenile Protective Association, the National Child Labor Organization, and the Social Settlement. M., W., 9:30-10:30.

Assistant Professor Parker.

20. Criminals and Delinquents.—Problems of Crime. Criminal anthropology, physical and psychical. Criminal diagnostics, definition of crime, detection and identification of criminals, state control of criminals. Criminal therapeutics, penalties, punishment and reformation of criminals, jails, prisons, and reformatories. Criminal hygienics, police prevention of crime, presumptive criminals. Principles of scientific penology, lynch-law, and the trend of crime in modern times. T., Th., 10:30-11:30.

Assistant Professor Parker.

21. Social Problems.—A study of current social problems and the influence of certain factors in social evolution. The function, origin, forms, development, and problems of the family. Problems of population, immigration, the negro, the city, poverty and pauperism, education, and social progress. M., W., 11:30-12:30.

Assistant Professor Parker.

22. Seminary.—Opportunity is here given for the detailed study of special problems in social science. Credit according to number of hours elected; minimum, two hours; maximum, four hours.

Assistant Professor Parker.

Evening Course

5. Elementary Sociology.—A fundamental course dealing with the origin, composition, evolution, and functions of society. Special attention will be given to the study of the existing social organization and certain of the larger problems connected therewith. This course is designed to be introductory to all advanced work in the field of Social Science. M., 7:30-9:30.

Assistant Professor Parker.

PSYCHOLOGY

Burtis Burr Breese, Ph. D., ... Professor of Psychology.
Schachne Isaacs, A. M., ... Assistant in Psychology.

For Undergraduates

1a. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. *First semester,* M., W., 11:30-12:30; F., 1:00-2:00.

Professor Breese.

1b. A continuation of 1a.—*Second semester,* M., W., F., 11:30-12:30. Professor Breese.

Courses 1a and 1b are open only to candidates for the A. B. degree. For prerequisite courses in Psychology for the B. S. degree, see Announcement of the College for Teachers.

For Undergraduates and Graduates

2a. Experimental Psychology.—Laboratory course. *First semester,* M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—A continuation of 2a. *Second semester,* M., W., F., 2:00-4:30.

Professor Breese and Mr. Isaacs.

8a. Social Psychology.—The aim of this course is to exhibit the human mind in its development within a social environment; to show how, under the influence of the social environment, the native tendencies of the mind become gradually organized into systems of increasing complexity, and the ways in which they co-operate in shaping and sustaining such institutions as come to exist among men in civilized societies. Open to students who have had Introductory Psychology. *First semester,* M., W., F., 9:30-10:30.

Assistant Professor Hartmann.

9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.

Professor Breese and Mr. Isaacs.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Th., 3:00-5:00.

Professor Breese.

6a. Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. *First semester.* Two credit hours. Hours to be arranged. Professor Breese.

Evening Course

10. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. T., 7:30-9:30. Professor Breese.

ROMANCE LANGUAGES

PHILLIP OGDEN, PH. D., . . . Professor of Romance Languages.
RALPH EMERSON BASSETT, A. M., Assistant Professor of Romance Languages.
MERTON JEROME HUBERT, A. M., Instructor in French and Italian.
WILLARD A. KINNE, A. B., . . Instructor in French and Spanish.

FRENCH

For Undergraduates

1. Elementary French.—Chardenal's Complete French Course; Aldrich and Foster, *A French Reader;* Enault, *Le Chien du Capitaine;* Coppée, *On rend l'argent.* Composition.

Sec. I, M., W., 11:30-12:30; F., 1:00-2:00. Mr. Hubert.
Sec. II, T., Th., S., 8:30-9:30. Mr. Kinne.

Course 1 is open to students who have had no French in the high school.

2. Intermediate French.—*First semester,* Fraser and Squair's *French Grammar,* Part II; François, *French Prose Composition;* dictation and modern texts. *Second semester,* nineteenth century prose writers, etc. Dictation and composition.

Sec. I, M., W., F., 9:30-10:30. Mr. Hubert.
Sec. II, T., Th., S., 9:30-10:30. Mr. Kinne.
Sec. III, M., W., F., 9:30-10:30. Mr. Kinne.

Course 2 is open to students who have taken Course 1 or who have had two years of French in the high school.

11. French Literature in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Daudet; Hugo; Zola; Loti. M., W., F., 10:30-11:30. Mr. Hubert.

Course 11 is open to students who have passed in Course 2.

3. French Composition.—Review of the more difficult points in French Grammar and Syntax. Dictation. Reproduction of narrative and descriptive passages read by the instructor from French authors. Conversation. Original composition in French. T., Th., 11:30-12:30. Professor Ogden.

With the permission of the instructor.

Course 3 is open to students who have taken Course 2.

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Corneille, Racine, Molière. T., Th., 9:30-10:30. Professor Ogden.

Course 4 is open to students who have passed in Course 11.

5. French Drama in the Nineteenth Century. Rapid reading of modern plays. W., 1:00-2:00; F., 2:00-3:00. Mr. Hubert.

10. Old French Readings.—Constans, *Chrestomathie de l'Ancien Français*. Lectures on historical French grammar. Two credits. Hours to be arranged. Mr. Hubert.

Course 10 is open to students who have passed in Course 4 or its equivalent.

24. The Prose Writers of the Eighteenth Century.—T., 4:00-6:00. Professor Ogden.

Course 24 is open to students who have passed in Course 4 or Course 11.

26. French Poets in the Nineteenth Century.—Lectures; outside reading; conversation in French. T., Th., 8:30-9:30. Professor Ogden.

15. French Conversation.—M., W., 1:00-2:00; F., 2:00-3:00. Two credits. Professor Ogden and Mr. Hubert.

For Teachers

30. Intermediate French.—Grammar, composition, conversation. One credit per semester for A. B. S., 10:30-11:30. Mr. Hubert.

24. Course 24, outlined above, is open to teachers, by permission, as well as to regular students.

Teachers who are pursuing graduate studies and are qualified to do advanced work in the Romance languages may elect courses from the above upon advice from the head of the department.

Evening Course

33. Elementary French.—Pronunciation, grammar, reading. T., 7:30-9:30. Mr. Hubert.

SPANISH

For Undergraduates

6. Elementary Spanish.—Pronunciation, grammar, composition, conversational drill. Text-books: Bassett, *Handbook of Spanish Pronunciation and Spanish Grammar;* Ramos-Aza, *Zaragüeta.*

Sec. I, M., W., F., 9:30-10:30.

Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.

Assistant Professor Bassett and Mr. Kinne.

Course 6 is open to students who have had no Spanish in the high school.

18. Spanish Composition.—Systematic practice in speaking and writing. Review of syntax. Business forms. Bassett, *Spanish Composition;* Román y Salamero, *El castellano actual;* Harrison, *Spanish Correspondence.* T., Th., 1:00-2:00.

Assistant Professor Bassett.

9. Intermediate Spanish.—Selected texts since 1850. Ibáñez, *La Barraca;* Pereda, *Pedro Sánchez;* Pérez Galdós, *Doña Perfecta;* Hartzenbusch, *La coja y el encogido.* M., W., 1:00-2:00; F., 2:00-3:00. Assistant Professor Bassett.

Courses 18 and 9 must be preceded by Course 6 or by two years of Spanish in the high school.

14. The Nineteenth Century.—Representative works from leading Spanish authors of the past hundred years. Alarcón, Becquer, Fernán Caballero, Larra, Zorrilla, etc. M., W., F., 10:30-11:30. Assistant Professor Bassett.

Course 14 must be preceded by Course 9.

For Undergraduates and Graduates

[8. Spanish Literature in the XVI and XVII Centuries.] Cervantes, *Don Quijote;* selected plays by Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. Th., 3:00-5:00. Assistant Professor Bassett.

Course 8 alternates with Course 22.

Omitted in 1915-16.

22. The Picaroon Novel.—*Lazarillo de Tormes;* Alemán, *Guzmán de Alfarache* (Part I); Cervantes, *Novelas ejemplares* (selections); Espinel, *Marcos de Obregon.* Th., 3:00-5:00.

Assistant Professor Bassett.

Course 22 alternates with Course 8.

23. Early Spanish.—Phonology and Inflections. *El Poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged.
Assistant Professor Bassett.

Evening Courses

31. Elementary Spanish.—Pronunciation, grammar, oral practice, and introductory reading. F., 7:30-9:30. Mr. Kinne.

32. Intermediate Spanish.—Grammar review and written exersizes, selected prose texts, business and letter forms, practice in speaking. T., 7:30-9:30. Mr. Kinne.

34. Advanced Spanish.—Special exercises in grammar and composition. Reading of modern prose. W., 7:30-9:30.
Assistant Professor Bassett.

ITALIAN

For Undergraduates

7. Elementary Italian.—Grandgent, *Italian Grammar;* De Amicis, *Cuore;* Serao, *All' Erta, Sentinella;* Testa, *L'oro e l'orpello;* Giacosa, *Come le foglie.* M., W., 11:30-12:30; F., 1:00-2:00.
Mr. Hubert.

For Undergraduates and Graduates

16. Italian Prose in the XIX Century.—Fogazzaro, Amicis, D'Annunzio, Verga. Two hours, to be arranged. Mr. Hubert.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

ZOOLOGY

Harry Lewis Wieman, Ph. D., . Associate Professor of Zoology.
Robert Chambers, Jr., Ph. D., Assistant Professor of Histology and Comparative Anatomy.
Cora May Box, A. M., ... Instructor in Zoology.
Raphael Isaacs, A. M., ... Assistant in Zoology.
Annette F. Braun, Ph. D., ... Assistant in Zoology.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students who desire to be recommended as teachers of zoology in secondary schools must complete as a minimum, Courses 1a to 8b inclusive, and Courses 19a and 20a. It is very desirable that they also do at least one year of graduate work.

For Undergraduates

1a. Animal Biology.—Lectures dealing with topics of a general biological nature, such as animal activities and adaptations, protoplasm, the cell, sex, development, etc. The course is intended to provide a thorough foundation for further work in zoology. This course must be accompanied by Course 2a. *First semester,* M., W., F., 9:30-10:30.

Associate Professor Wieman.

2a. Animal Biology, Laboratory.—This course consists of the practical laboratory and field work which must accompany Course 1a. Certain animals, selected as types to illustrate general principles, are dissected and compared. Careful notes and drawings of all dissections are required. *First semester.*

Sec. 1, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Sec. III, T., Th., 9:30-12:30.

Associate Professor Wieman, Miss Box, and Dr. Braun.

3b. General Zoology.—Lectures dealing in a comparative way with the various groups of animals, including life-histories, evolution, heredity, and classification. This course must be accompanied by Course 4b. *Second semester,* M., W., F., 9:30-10:30.

Associate Professor Wieman.

Course 3b is open to students who have passed in Course 1a.

4b. General Zoology, Laboratory.—This course consists of the practical work which must accompany Course 3b. Careful dissections, drawings, and comparisons are required. *Second semester.*

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Sec. III, T., Th., 9:30-12:30.

Associate Professor Wieman and Miss Box.

For Undergraduates and Graduates

19a. Embryology of Vertebrates.—The work consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal organs of the body. This course must be accompanied by Course 20. T., Th., 1:00-2:00. Assistant Professor Chambers.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

20a. Embryology of Vertebrates, Laboratory.—Laboratory work to accompany Course 19a. The work is based largely on the chick and pig. T., Th., 2:00-5:00.

Assistant Professor Chambers and Mr. Isaacs.

15a. Invertebrate Morphology.—Lectures and recitations on the morphology of invertebrates. This course must be accompanied by Course 16a. *First semester.* M., W., 1:00-2:00. Miss Box.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

16a. Invertebrate Morphology, Laboratory.—Study and dissection of selected forms to accompany Course 15a. *First semester,* M., W., 2:00-5:00. Miss Box.

[17b. Comparative Anatomy of Vertebrates.] Lectures on the anatomy, classification, habits, and distribution of vertebrates. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester,* T., Th., 1:00-2:00.
Assistant Professor Chambers.

Prerequisite: Courses 19a and 20a.
Omitted in 1915-16.

[18b. Comparative Anatomy of Vertebrates, Laboratory.] The work consists in the careful dissection and study of selected forms to accompany Course 17b. *Second semester,* T., Th., 2:00-5:00.
Omitted in 1915-16. Assistant Professor Chambers.

13b. Animal Physiology.—Lectures dealing with fundamental physiological phenomena of animal life. This course must be accompanied by Course 14b. *Second semester,* T., Th., 1:00-2:00.
Assistant Professor Chambers.

Prerequisite: Courses 1a, 2a, 3b, and 4b.

14b. Animal Physiology, Laboratory.—Experiments on different organisms selected for the study of physiological activities, such as irritability, conductivity, reproduction, tropisms, etc., to accompany Course 13b. *Second semester,* T., Th., 2:00-5:00.
Assistant Professor Chambers.

Courses 13b and 14b alternate with Courses 17b and 18b.

[10a. Microscopical Technique.] The course includes the preparation and use of standard fixing and staining agents, and drill in the manipulative processes incident to general microscopy and cytology. Two or three credits. *First semester,* M., W., 1:00-4:00; F., 2:00-5:00. Associate Professor Wieman.

Prerequisite: Courses 19a and 20a.

Omitted in 1915-16.

[10b. Cytology.] A laboratory course intended to serve as an introduction to cytology and the general field of cellular biology. Two or three credits. *Second semester,* M., W., F., 1:00-4:00.
Prerequisite: Course 10a. Associate Professor Wieman.

Omitted in 1915-16.

Primarily for Graduates

30. Current Problems in Zoology.—Assigned readings and discussions to accompany courses of research. A reading knowledge of French and German is required. Two credit hours.

Associate Professor Wieman.

31. Research.—Credit according to number of hours elected.

Associate Professor Wieman and Assistant Professor Chambers.

Evening Course

50. Principles of Animal Biology.—A lecture and laboratory course. The lectures deal with general biological topics, such as animal morphology, physiology, adaptation, heredity, and evolution. In the laboratory certain animals selected as types are dissected and compared. Lecture, F., 7:30-9:30; Laboratory, Th., 7:30-9:30.

Associate Professor Wieman and Mr. Isaacs.

SIX-YEAR COMBINED COLLEGIATE AND MEDICAL COURSE

(Leads to the degrees B. S., M. D.)

The entrance requirements to this course will be those of the College of Liberal Arts of the University of Cincinnati. The B. S. degree will be granted at the end of the second medical year upon the joint recommendation of the faculties of the Colleges of Liberal Arts and Medicine, and the M. D. degree at the end of the sixth year. Every candidate for the B. S. degree must obtain 62 credits in the College of Liberal Arts, but no student may count toward these 62 credits more than 6 credit hours of work marked "D," or "poor," in any one semester. This restriction, however, shall not operate to prevent his counting courses so marked toward the completion of his "prescribed" work. Any premedical student who receives "D," or "poor," in more than six hours of work in any one semester must take an equal additional number of hours in an elective approved by the Dean of Liberal Arts, and pass in such electives with a grade of "C" or over, in order to be eligible for the degree of B. S. This rule became operative for premedical students with the first semester of the academic year 1914-15.

The first year of the course will consist of the following courses, which are described in the Announcement of the College of Liberal Arts under the corresponding numbers. *It should be noted that five hours of credit for a laboratory course includes three lecture hours and two laboratory periods of three hours each.*

First Year

Chemistry—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. If a student enters with advanced credits in chemistry, he shall take physical chemistry.

Physics—*5 hours:* Lecture Courses 26 and 27; Laboratory Courses 2 and 22.

English—*3 hours:* Course 1.

German—*3 hours,* Course 1; or French—*3 hours,* Course 1.

Physical Education—*1 hour.*

The one-year college course in German is equivalent to two years in the High School, and in addition to this, as will be seen, there will be required, in the second year, a course in Scientific German, aimed to give the student a reading knowledge of German. Students who present on entrance an equivalent of German 1, and a reading knowledge of German, are required to take French 1 in

their first year, and may substitute an elective for Scientific German in the second year; or those who present only the equivalent of German 1 will be obliged to take the Scientific German of the second year schedule in their first year. In this case French may be taken in the second year in place of German.

SECOND YEAR

Chemistry—*5 hours:* First semester, Courses 5 and 6 which have been formed by abbreviating and combining courses formerly described as 5, 6, and 7. Second semester, organic chemistry, Courses 8 and 9.

Zoology—*5 hours:* First semester, Courses 1 and 2; second semester, Courses 3 and 4. In addition to this, students are recommended to take a summer course in Biology at the Marine Biological Laboratory, Woods Hole, Mass.

Scientific German—*2 hours* (see paragraph on French and German under "First Year").

Elective—*4 hours.*

The third, fourth, fifth, and sixth years of this combined course are the regular years of the Medical College.

*DRAWING, MODELING, AND CARVING

By an arrangement with the Art Academy of Cincinnati (originally established as the McMicken School of Design in 1869, and a department of the University of Cincinnati from 1871 to 1884, when it was transferred to the Cincinnati Museum Association) students of the University may elect courses in Drawing, Modeling, and Carving at the Art Academy in 1915-16, and, upon presentation of the proper certificate from the Director of the School, may receive credit in the Registrar's office for such courses as part of the total number of "credits" required for the degree of Bachelor of Arts. On the payment of a fee of twenty-five dollars at the office of the Art Academy, the student is admitted to the several day classes (drawing, modeling, carving, and design). For the night classes the fee is five dollars. In the Summer Term of ten weeks no instruction is given at night. The Winter Term extends from September 27, 1915, to May 31, 1916, the Summer Term from the middle of June to the end of August.

The following courses of instruction are offered:

1. Free-hand Drawing.—From objects and casts. Day classes, M., W., F., 8:45-12:45, or M., T., W., Th., F., 1:00-4:00, and S., 8:45-12:45. Night classes, T., Th., F., 7:15-9:15.

Miss Young, Miss Miller, Miss Lord,
Miss Wilson, and Mr. Reisz.

Color work in oils, water colors, or pastels is also taught in the day classes, but not at night.

2. Drawing and Painting from Life.—Figure or head. Day classes, M., T., W., Th., F., S., 8:45-12:45, and M., T., W., Th., F., 2:00-4:00, 1:30-4:30. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Duveneck, Mr. Meakin, Mr. Wessel, and Mr. Hopkins.

Artistic Anatomy is a part of this course. The night classes draw the head or figure from life.

3. Illustration.—M., T., W., Th., F., 1:30-4:30.

Mr. Eschenbach.

4. Modeling.—From casts. Day classes, T., Th., S., 8:45-12:45. Night classes, M., W., 7:15-9:15. Mr. Barnhorn.

5. Modeling. Advanced Course.—From life. Day classes, M., T., W., Th., F., S., 8:45-12:45. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Barnhorn.

6. Wood Carving.—M., W., F., 12:30-4:30, and S., 8:45-12:45.

Mr. Fry.

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* For the teachers' training course in art, see announcement of the College for Teachers.

7. Decorative Design.—The principles of design, preparation of decorative motives, and their application to metals, enamels, leather, porcelain, etc. T., W., Th., F., 1:30-4:30. Miss Riis.

From the courses above offered a student may elect not more than six hours in any one semester. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

COLLEGE FOR TEACHERS

The College for Teachers is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati.

The general oversight of the college is entrusted to a Joint Committee consisting of the President of the University, a member of the Board of Directors, the Superintendent of Schools, and a member of the Board of Education.

The faculty of the college consists of the President of the University, the Superintendent of Schools, Professors, Assistant Professors, and Instructors in Education, and members of other faculties of the University giving courses which are expressly arranged to meet the requirements of the college.

The staff of instruction consists of the members of the faculty, persons belonging to other departments of the University and assigned by the President, persons holding positions in the public schools and assigned by the Superintendent, and persons belonging to the staffs of affiliated schools.

JOINT COMMITTEE

CHARLES WILLIAM DABNEY, PH. D., LL. D., President of the University.
ARTHUR M. SPIEGEL, Member of the Board of Directors of the University.
RANDALL JUDSON CONDON, A. M., LL. D., Superintendent of Cincinnati Schools.
ALBERT D. SHOCKLEY, . . . Member of the Board of Education.

FACULTY AND STAFF OF INSTRUCTION

CHARLES WILLIAM DABNEY, PH. D., LL. D., President of the University.
RANDALL JUDSON CONDON, A. M., LL. D., Superintendent of Cincinnati Schools.
WILLIAM PAXTON BURRIS, A. M., L. H. D., Professor of the History and Principles of Education, and Dean of the College for Teachers.
JOHN WILLIAM HALL, A. M., Professor of Elementary Education.
HENRY SKINNER WEST, Ph. D., Professor of Secondary Education.
BURTIS BURR BREESE, PH. D., ... Professor of Psychology.
*NEVIN M. FENNEMAN, PH. D., Professor of Geology and Geography.
GUY ALLAN TAWNEY, Ph. D., ... Professor of Philosophy.
HARRIS MILLER BENEDICT, PH. D., ... Professor of Botany.
ANN GILCHRIST STRONG, B. S., . . Professor of Household Arts.

* Absent on leave, 1915-16.

Isaac Joslin Cox, Ph. D., . . . Associate Professor of History.
Cyrus De Witt Mead, Ph. D., Assistant Professor of Elementary Education.
J. Ernest Carman, B. S., M. Di., . Assistant Professor of Geology.
Henry Gottlieb Hartmann, Ph. D., Assistant Professor of Philosophy.
Bertha K. Young, A. M., . . . Assistant Professor of English.
William Tunstall Semple, Ph. D., Assistant Professor of Latin.
Eleanor Toaz, B. S., . . Assistant Professor of Household Arts.
Abbie Louise Day, B. S., B. Di., Instructor in Elementary Education.
Levi A. Giddings, M. S., ... Instructor in Botany.
Walter Bucher, Ph. D., . . Instructor in Geology and Geography.
Schachne Isaacs, A. M., ... Assistant in Psychology.

Courses in the teaching of special subjects are given by the following persons belonging to the staff of the Cincinnati public schools.

Walter H. Aiken . . . . . Music.
William H. Vogel . . . . . Art and Hand Work.
Carl Ziegler, M. D. . . . . Physical Training and Hygiene.
A. H. Steadman . . . . . Penmanship.
H. H. Fick, Ph. D. . . . . German.
Julia S. Bothwell . . . . . Kindergarten.
Grace Anna Fry . . . . . Kindergarten.
Mary Elizabeth Hyde . . . . . Art.
William P. Teal . . . . . Art.
——— ———, ... Art.
Emma Kohnky, A. M. . . . . Teaching of Defectives.

Technical instruction and training in kindergarten courses are given by the following members of the staff of the Cincinnati Kindergarten Training School:

Lillian H. Stone . . . . . Principal.
Elsie Hobart . . . . . Instructor.
John Jerome Thompson . . . . . Art.
Mrs. W. E. Lewis . . . . . Physical Training.
Marie Curtis Rains . . . . . Instructor.
Frances A. Le Voy . . . . . Instructor.
Josephine Simrall . . . . . Instructor.

At the Art Academy of Cincinnati:

Elizabeth Kellogg . . . . . History of Art.

GENERAL REGULATIONS

In harmony with action taken on April 10, 1913, the faculties of the College for Teachers and of the McMicken College of Liberal Arts unanimously concurring, the University undertakes the academic and professional preparation of teachers in accordance with the following regulations. The conditions governing admission, graduation, prerequisite or parallel studies, elective studies, privileges, etc., vary with the different programs outlined below, and are definitely indicated in connection therewith in each case:

I. Four-year curricula are offered to prospective teachers in elementary schools, leading to the degree of Bachelor of Science, conferred upon recommendation of the faculty of the College for Teachers.

During the first two years, students matriculated in such curricula are registered in, and are under the jurisdiction of, the McMicken College of Liberal Arts, subject to the limitations stated below. During the last two years, such students are registered in, and are under the jurisdiction of, the College for Teachers.

The standard of admission to such four-year curricula is the same as that of admission to the McMicken College of Liberal Arts.

The courses taken during the first two-year period as prerequisite to programs in the College for Teachers are prescribed by the faculty of this college, after a conference with the faculty of the McMicken College of Liberal Arts.

The courses which must be included in the second two-year period are determined by the faculty of the College for Teachers.

Students from other institutions who have met college entrance requirements, who are candidates for the above degree, and who offer at least two years of work, academic or professional, acceptable to the faculty of the College for Teachers for advanced standing, are registered in and are subject to the jurisdiction of this college.

II. The University also offers extended curricula which lead, at the end of the fourth year, to the degree of Bachelor of Arts, conferred upon recommendation of the faculty of the McMicken College of Liberal Arts, and which lead also, at the end of the fifth year, to appropriate teacher's diplomas conferred upon recommendation of the faculty of the College for Teachers.

The courses which shall be included in such extended curricula are determined by the faculty of the College for Teachers, subject to regulations governing students who are candidates for the Bachelor of Arts degree.

Students pursuing such extended curricula are registered in, and are subject to the jurisdiction of, the College for Teachers the fifth year only.

III. Independently, or in connection with institutions affiliated with it, the University offers special curricula, not less than two years in length, to students who have fulfilled specified entrance requirements, such curricula leading, upon recommendation of the faculty of the College for Teachers, to appropriate teacher's diplomas. Such diplomas are granted to students who have specialized in kindergarten training, art, household arts, etc., without proceeding to a degree.

Students enrolled in such special curricula are registered in, and are subject to the jurisdiction of, the College for Teachers.

Students who complete such special curricula may subsequently be recommended by the faculty of the College for Teachers for the degree of Bachelor of Science upon conditions determined by this faculty, subject, however, to the completion of two years of undergraduate work accepted by the faculty of the McMicken College of Liberal Arts.

THE OHIO SCHOOL LAW GOVERNING THE CERTIFICATION OF TEACHERS WITHOUT EXAMINATION

The standards of qualification set by the Ohio School Law, which entitle those persons who met them to the various state certificates without further examination, are also respected in the preparation of the programs offered.

In accordance with this law, the college is "approved by the Superintendent of Public Instruction", and its programs lead to the class of state certificate specified.

These state certificates are "recognized" by nearly every state in the Union, consequently, they are not only "valid in any school district within this state", but because of such wide-spread recognition, permit the holders to teach practically anywhere in the United States in the class of position which such certificates designate.

That part of the Ohio School Law which makes provision for the granting of state certificates without further examination is as follows:

Sec. 7807-3. A graduate from any normal school, teachers' college, college or university, who has completed a full two years' academic and professional course in such institution and who also possesses a first grade high school diploma or its equivalent shall, upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional elementary certificate valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-4. A graduate from any normal school, teachers' college, college or university, who has completed a full four years'

academic and professional course in such institution and who also holds a certificate of graduation from a first grade high school or its equivalent shall, upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional high school certificate valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-5. A graduate from any normal school, teachers' college, college or university, who has completed a special two-year course, with training school experience in music, drawing, penmanship, manual training, physical culture, domestic science, agriculture, kindergartening, any modern language, or such other studies as are required to be taught by special teachers or supervisors and who also possess a first grade high school diploma or its equivalent, shall upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional special certificate in such subject or subjects valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-6. It shall be the duty of the state board of school examiners to issue without examination to every holder of a state provisional certificate, a life certificate of similar kind upon satisfactory evidence that the holder thereof has completed at least twenty-four months of successful teaching, after receiving such provisional certificate.

Sec. 7807-7. The state board of school examiners shall issue without examination, a state life high school certificate to the holder of a degree from any normal school, teachers' college, or university that has been approved by the superintendent of public instruction, upon satisfactory evidence that the holder thereof has completed at least fifty months of successful teaching.

STANDARDS GOVERNING APPOINTMENT AND PROMOTION TO POSITIONS IN THE CINCINNATI PUBLIC SCHOOLS

These standards also have been kept in mind in arranging the programs offered. The regulations governing such appointment and promotion are of interest to every one who contemplates entering the Cincinnati school service, and are as follows:

Section 1. Appointments and promotions to all teaching and

supervisory positions in the school system shall be made by the Superintendent of Schools from merit lists based upon personality, scholarship, professional preparation and successful experience.

SECTION 2. There shall be the following lists:

I. A first or preferred list and a second list:

(1) For regular positions in the elementary schools;

(2) For positions in each of the special departments in the elementary schools;

(3) For positions in each of the departments in the high schools;

(4) For each class of principalship and assistant principalship;

(5) For other positions at the direction of the Superintendent of schools.

II. Special Lists.

SECTION 3. First or preferred lists for appointment and promotion shall be formed from candidates whose teaching has been approved and who possess either of the following qualifications:

(a) Graduation from a standard institution—college, university, normal or special school, the completion of approved professional training, either as a part of or in addition to the course pursued in such institution; or, in lieu of such professional training, successful teaching experience of not less than two years and satisfactory evidence of professional study and growth.

(b) The completion of approved courses in recognized institutions equivalent to those required for graduation from a standard institution including a course in professional training; or in lieu of such training, successful teaching experience of not less than two years, and satisfactory evidence of professional study and growth.

NOTE.—A "standard" institution is one which requires the completion of a four-year high school course for admission, and not less than 120 semester hours for graduation.

A "recognized" institution is one requiring the completion of a four-year high school course for admission, equivalent to those of a "standard" institution.

SECTION 4. Second lists shall be formed from candidates who have completed a first-grade high school course or its equivalent, and have completed a two-year normal, professional or technical school course, or in lieu thereof, have not less than two years of approved experience in teaching and one year of professional training.

SECTION 5. Special lists for positions requiring technical knowledge and skill shall be formed from time to time at the direction of the Superintendent of Schools from candidates whose education and training qualify them to fill such positions.

SECTION 6. The listing and ranking of candidates for appointment to teaching positions in the elementary schools shall be in charge of the Professor of Elementary Education of the College for Teachers, with the co-operation of the supervisors concerned, in cases affecting the special departments.

SECTION 7. The listing and ranking of candidates for appointment to teaching positions in the high schools and for promotion within the high school service shall be in charge of the Professor of Secondary Education in the College for Teachers, with the co-operation of the supervisors concerned in cases affecting the special departments.

SECTION 8. The listing and ranking of candidates for principalships and assistant principalships shall be in charge of the Assistant Superintendent of Schools, with the co-operation of the Professors of Education in the College for Teachers.

SECTION 9. All lists for appointment and promotion shall be subject to the approval of the Superintendent of Schools.

SECTION 10. Candidates eligible to consideration for positions other than teaching positions, whose qualifications have been tested and approved, shall be ranked according to their relative fitness for the positions to be filled.

SECTION 11. Any teacher eligible under the rules, who has voluntarily withdrawn from the service, whose teaching has been inspected and approved, may, at the option of the Superintendent of Schools, take precedence over all other candidates listed for appointment to the class of position formerly held by such teacher.

SECTION 12. Appointment and promotion lists for all regular positions shall be formed in June of each year, and at such other times as may be necessary, at the direction of the Superintendent.

SECTION 13. Appointments and promotions shall be made in the order of rank on the lists, candidates on the first or preferred list taking precedence over candidates on the second list; however, any properly listed candidate, who is exceptionally qualified for a given position, on account of training, experience or personality, may, by action of the Superintendent of Schools, after conference with the official who listed such candidate, take precedence over all other persons on either list; all such appointments to be accompanied by a statement of the reasons for the appointment. Residents of Cincinnati who are equal in rank to other candidates, shall receive precedence in appointment.

SECTION 14. A candidate may decline appointment in turn without forfeiting the right to later appointment at any time before the formation of a new list.

PROGRAMS OFFERED

PROGRAM I.—*Leading to the degree of Bachelor of Science, to a Provisional Elementary Certificate, and to the Preferred List* from which appointments to positions in the elementary schools of Cincinnati are made.*

ADMISSION.—Before being admitted to this program, a student must satisfy the regular college entrance requirements and complete college courses which count, in the aggregate, sixty college credit hours, i. e., the equivalent of two years of college work.

The following must have been included in the subjects taken by the student in the last two years of the high school course or in the first two years of the college course as indicated below. If taken in high school, the subject must have been pursued not less than four periods per week for a year; if in college, not less than three periods per week for a year:

English.—Two or three college courses, counting not less than ten college credit hours, exclusive of English I.

History.—A year's course in each of three of the following five fields of history including the field last named: ancient, mediaeval, modern, English, American history or American history and civics.

Not less than one of the three courses shall have been taken in college, but a student who has taken college courses in two of the three required fields may offer work which was done in the third field during the first or second year of the high school course.

Science.—A year's course in each of the following three fields: physical science (physics or chemistry), biological science (botany, zoology, or general biology), earth science (geology or geography).

Not less than two of the three courses in science shall be taken in college, provided that the aggregate of college credits in science here prescribed shall not exceed twelve; otherwise, only one college course in science need be taken. But students who have taken college courses in two of the three required fields may offer work which was done in the third field during the first or second year of the high school course.

The college requirement in science may be satisfied in one of the following three ways: (1) by taking three-hour courses in two fields; or (2) by taking a three-hour course in one field for a year and a five-hour course in another field for a semester; or (3) by

* Graduates whose practice teaching has not been entirely satisfactory will not be entitled to positions on the preferred list.

taking a five-hour course in one of the two required fields, if three-hour courses in both of these fields are not offered.

Educational Psychology.—A three-hour course for a year in this subject is required and may not be taken earlier than the Sophomore year of the college.

Distribution of Work.—The course in psychology and one of the required courses in English, history, or science, respectively, may be distributed over the Sophomore and Junior years, as the student may elect, subject to the approval of the Dean of the College for Teachers.

Courses Required.—During the Junior and Senior years the following courses are required. Subject to the approval of the Dean of the College for Teachers, a student may choose a distribution of work different from that indicated, but in no case shall the amount of work in education during the Junior year be less than that represented by ten credits:

JUNIOR YEAR

Ed. 1.—History and Principles of Education	6 credits
Ed. 14.—Teaching of English	4 "
Philosophy 5a.—Ethics	3 "
Philosophy 5b.—Ethical Interpretations	3 "

SENIOR YEAR

Ed. 2.—Theory and Practice of Teaching	6 credits
Ed. 2p.—Practice Teaching	4 "
Ed. 17.—Educational Administration	3 "
Two of the following	4 "
Ed. 16.—The Teaching of History	2 credits
Ed. 20.—The Teaching of Arithmetic	2 "
Ed. 22.—The Teaching of Geography	2 "

Elective Courses.—During the Junior and Senior years, the student shall elect courses in the College of Liberal Arts, which shall count not more than thirty credits.

PROGRAM II. *Leading to a Teacher's Diploma in Elementary Education, to a Provisional Elementary Certificate, and to the Preferred List* from which appointments to positions in the elementary schools of Cincinnati are made.*

ADMISSION.—This program may be completed in a single year, and is open to graduates who have completed an approved four-year college course leading to a Bachelor's degree.

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* See note under Program I.

Prerequisite or Parallel Courses:

Psychology 11a and 11b or 1a and 1b	6 credits
Philosophy 5a.—Ethics	3 "
Philosophy 5b.—Ethical Interpretations	3 "
Education 1.—History and Principles of Education	6 "

Not more than two of these three subjects may be taken parallel with the required courses in Education indicated below. Any student who has had all three of these subjects, may elect courses which count not less than twelve credits, either in McMicken College of Liberal Arts or in the Graduate School. Any student who has had two of these subjects may elect courses, as above, counting not less than six credits. The courses elected are subject to the approval of the Dean of the College for Teachers.

Courses Required:

Ed. 2.—Theory and Practice of Teaching	6 credits
Ed. 2p.—Practice Teaching	4 "
Ed. 17.—Educational Administration	3 "
Ed. 14.—Teaching of English	4 "
Two of the following	4 "
Ed. 16.—The Teaching of History	2 credits
Ed. 20.—The Teaching of Arithmetic	2 "
Ed. 22.—The Teaching of Geography	2 "
Prerequisite or parallel or approved elective courses (see above)	12 "

PROGRAM III.—*Leading to a Teacher's Diploma in Secondary Education, to a Provisional High School Certificate, and to the Preferred List* from which appointments to regular positions in the high schools of Cincinnati are made.*

ADMISSION.—This program may be completed in a single year, but before entering upon it, a student must complete an approved four-year college course leading to a Bachelor's degree. The subject in which the student wishes to qualify as a high school teacher must have been pursued as a major in the undergraduate course, and the marks received in this subject must show high scholarship. The student must also be recommended by the head of the department in which this major subject was pursued and be accepted by the Dean of the College for Teachers after conference with the Professor of Secondary Education.

* See note under Program I.

Prerequisite or Parallel Courses:

Psychology 11a and 11b or 1a and 1b	6 credits
Philosophy 5a.—Ethics	3 "
Philosophy 5b.—Ethical Interpretations	3 "
Education 1.—History and Principles of Education	6 "

Not more than two of these three subjects may be taken parallel with the required courses in Education indicated below. Any student who has had all three of these subjects shall elect courses in the Graduate School which count not less than twelve credits. A student who has had two of these three subjects shall elect work in the Graduate School which counts not less than six credits. Of the work elected in the Graduate School, not less than six credits shall be in the field in which the student expects to teach.

Courses Required:

Education 3.—Secondary Education	4 credits
Education 3p.—High School Assisting	3 "
Method of Teaching the major subject	2 "
Education 17.—Educational Administration	3 "
Prerequisite or parallel or elected courses (see above)	12 "

PROGRAM IV.—*Leading to the degree of Bachelor of Science, to a Provisional Special Certificate in German, and to the Preferred List* from which appointments to positions as teachers of German in the elementary schools of Cincinnati are made.*

ADMISSION.—The same as Program I.

Courses Required.—The same as Program I with the following exceptions:

1. Education 30 instead of Education 16, 20, or 22.
2. Education 30p instead of Education 2p.
3. Courses in German, as follows:
   For those who have had no German in high school, the equivalent of German 1, 2, 3, 4, 21, 5 and 10 or 30.
   For those who have had two years of German in high school, the equivalent of German 2, 3, 4, 21, 5 and 10 or 30.
   For those who have had four years of German in high school, the equivalent of German 4, 21, 5 and 10 or 30.

In no case will students be permitted to enter upon this program without the ability to speak the German language correctly and fluently.

PROGRAM V.—*A two-year course leading to a Teacher's Diploma, to a Provisional Special Certificate in Kindergartning, and*

* See note under Program I.

to the Second List from which Assistant Kindergarten Directors in the public schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program a student must satisfy the regular college entrance requirements, be at least eighteen years of age, and be able to sing simple songs and play the piano accompaniments.

Courses Required:

Education 9 and 11	6 credits
Education 6	4 "
Education 17	3 "
Education 28	2 "
Psychology 11a and 11b	6 "
English 1	6 "

Approved courses in kindergarten training entitled to thirty-six credits, including twelve credits for practice and observation in the public school kindergartens of Cincinnati.

PROGRAM VI.—*A two-year course leading to a Teacher's Diploma, to a Provisional Special Certificate in Art, and to the Second List** from which teachers and supervisors of Art in the public schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program, a student must satisfy the regular college entrance requirements and must complete an amount of work in Art of approved quality equivalent to that represented by two years of study in the Art Academy of Cincinnati. It is understood, moreover, that all students are admitted upon a month's probation during which they must give satisfactory evidence of a high degree of capability in Art and show that they are otherwise qualified to pursue this program.

Courses Required:

Education 9 and 11	6 credits
Education 6	4 "
Education 17	3 "
Psychology 11a and 11b	6 "

The courses scheduled under Art Education on pp. 156-157.

Work at the Art Academy of Cincinnati on M., T., W., Th., and F. mornings the first year, and on M., W., and F. mornings the second year.

PROGRAM VII.—*A two-year course leading to a Teacher's*

* The practice work of a student must be entirely satisfactory before such student can be listed for appointment.

** See note under Program V.

Diploma, to a Provisional Special Certificate in Household Arts, and to the Second List from which teachers of the household arts in the public elementary schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program, a student must satisfy the regular college entrance requirements, submitting at least two units of credit for Domestic Science and Domestic Art taken in high school.

The student must also be at least eighteen years of age.

Courses Required:

Education 9 and 11	6 credits
Education 6	4 "
Education 17	3 "
Psychology 11a and 11b	6 "
Household Arts Education 1	4 "
Household Arts Education 2	8 "

Household Arts courses, including Foods, Nutrition 1, 2a, 2b, Textiles 8a, 8b, 9, and Household Economics 6, aggregating at least thirty credits in the School of Household Arts.

PROGRAM VIII.—*Leading to the degree of Bachelor of Science, to a Provisional Special Certificate for Teachers of Defective Children, and to the Preferred List** from which appointments to positions as teachers of defectives in the schools of Cincinnati are made.*

ADMISSION.—The same as Program I.

Courses Required:

Education 1	6 credits
Education 2	6 "
Education 14	4 "
Education 15	4 "
Education 17	3 "
Psychology 9	4 "

OTHER PROGRAMS

1. For those fitting for positions as instructors in education, supervisors, critic teachers, or administrators in educational positions requiring experience and advanced study.

To meet the needs of this class of students appropriate opportunity is given in advanced courses in Education, including seminar work, such courses counting in partial fulfillment of the requirements for the higher degrees conferred upon recommendation of the faculty of the Graduate School.

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* See note under Program V.
** See note under Program I.

2. Students who have completed Programs V, VI, or VII may count the same to the extent of sixty credits in fulfillment of the requirements for the degree of Bachelor of Science conferred upon recommendation of the faculty of the College for Teachers. Such students will be awarded this degree upon the completion of two years of approved work in the McMicken College of Liberal Arts. Holders of the degree will be eligible to preferred lists from which appointments to positions in the Cincinnati public schools are made, provided their practice teaching has been approved.

SPECIAL COURSES

Special Courses are offered to teachers in Cincinnati and vicinity, and are given on Saturdays and at hours during the week which do not conflict with the duties of the class-room. Credit is given on the books of the Registrar for satisfactory work done in these courses.

APPOINTMENT COMMITTEE

The Appointment Committee offers its services, without charge, to students seeking appointment to educational positions for which they are properly qualified. The Dean of the College as Chairman is assisted by other members of the faculty who are familiar with the student's work.

COURSES OF INSTRUCTION

The following is the list of courses offered for the year 1915-16. Certain of these courses are required of candidates for the first or preferred list of persons eligible to appointment in the Cincinnati schools. Others are intended to meet the needs of advanced students of education, as well as of teachers of experience. Courses which are prerequisite to the pursuit of the various professional programs for teachers are also included in this announcement, but with this exception only those which are primarily professional in character will be found here. All courses given in the University, many of which are semi-professional in character, are open to properly qualified students in the College for Teachers. (See the announcement of the McMicken College of Liberal Arts.)

EDUCATION

For Undergraduates

Education 1. History and Principles of Education.—Lectures, required reading, and discussions. Beginning with primitive so-

ciety, this course considers the various conceptions of education as they have arisen in the course of history. Special attention will be given to those conceptions which have been most instrumental in shaping current tendencies. Open to Juniors and Seniors. M., W., F., 10:30-11:30. Professor Burris.

Education 2. Theory and Practice of Teaching.—Lectures, discussions, practical work, and required readings. Development of the principles of method of the recitation and their application in the proper conduct of class exercises in the several subjects of the elementary schools. Three hours of class work and twenty hours of practice per semester. Hours for practice work must be arranged with the instructor before registration. Open to Seniors. M., W., F., 9:30-10:30. Professor Hall.

Education 2p. Practice Teaching.—Students taking Program I or Program II will be required to teach four different subjects in four different grades of the elementary schools of Cincinnati. Systematic observation of teaching is also required.

It is very desirable that students taking this course keep Tuesday and Thursday forenoons entirely free for this work, and that they keep Monday and Wednesday afternoons free as far as possible for the necessary conferences. Two credits per semester.
Professor Hall, Assistant Professor Mead, and Miss Day.

Education 6. General Method.—This is a brief course similar to Education 2, and is intended especially for undergraduates who are pursuing programs for teachers of special subjects. S., 8:30-10:30. Professor Hall.

Education 9. Ancient and Medieval Education.—S., 10:30-12:00.

Education 11. Modern Education.—S., 10:30-12:00.

These two courses given in alternate years will cover the same ground as Education 1. Three credits will be allowed for each course, but no credit will be given for either course if pursued less than a year.

Education 9 will be given in 1915-16. Professor Burris.

Education 14. The Teaching of English.—Lectures, discussions, and required readings. This course will consider the selection and organization of the subject matter and method of treatment in the primary, intermediate, and grammar grades of the following subjects: reading, spelling, literature, composition, and grammar. M., W., 8:30-9:30. Miss Day.

Education 15. Theory and Practice of Teaching Defective Children.—One hour class-room instruction and one period of

practical work in teaching defective children per week. Hours to be arranged. Miss Kohnky.

Education 16. The Teaching of History.—Lectures, discussions, readings, and reports. This course aims to cover the field of history as usually presented in elementary schools. Gathering material for lesson plans, its arrangement for presentation, the consideration of difficulties involved, and the method of overcoming the same will form the basis of the course. F., 8:30-9:30.
Assistant Professor Mead.

Education 17. Educational Administration.—This course will deal with school organization and administration in general, and give some attention to school management, class-room management, and school laws. T., 2:00-3:30. Professor Burris.

Education 20. The Teaching of Arithmetic.—Lectures, discussions, and required reading. This course will aim to work up portions of material for presentation in the various grades according to the course of study, with devices and methods for their use. The principles underlying the above will be developed. *Second semester,* M., W., 11:30-12:30.
Assistant Professor Mead.

Education 21. Seat Work and School Room Devices.—Seat work based upon and related to the actual class work of the grades. The use of illustrative materials, devices, and games, and the principles underlying the same. For teachers of the first four grades. S., 10:30-11:30. Miss Day.

Education 22. The Teaching of Geography.—Lectures, discussions, and required readings. This course will deal with the collection of suitable material for teaching geography in the grades and with the organization and method of presentation of this material. *First semester,* M., W., 11:30-12:30.
Assistant Professor Mead.

Education 28. Primary Methods.—Aims, methods, materials, and subject-matter of the first three grades as they change in form and content to suit the widening interests and the growing powers of the child. Lectures, required reading, and discussions. S., 9:30-10:30. Miss Day.

Education 30. The Teaching of German.—This course is intended especially for teachers of German in the elementary schools. For the conditions under which students may enter this course see Program IV, p. 142. M., 9:30-10:30. Supervisor Fick.

Education 30p. Practice Teaching.—Students taking Program IV are required to teach in from two to four different grades of the elementary schools, involving work in different phases of German. Systematic observation of teaching is also required.

It is very desirable for students taking this course to keep Tuesday and Thursday forenoons entirely free from other work.

Open to Juniors and Seniors. Two credits per semester.

Professor Hall, Supervisor Fick.

Education 32. The Teaching of Art and Hand Work.—The aim of this course is to familiarize those intending to teach in the public schools with the art and hand work pursued in the elementary grades at the present time, and to place before them the best methods for obtaining satisfactory results. This course prepares for the city examination in this subject. *First semester,* S., 8:30-11:30, for twelve weeks. Given at Hughes High School.

Supervisor Vogel.

Education 34. The Teaching of Music.—The purpose of the course is to give those who contemplate teaching in the public schools, or are at present teaching, a systematic and comprehensive training in the matter and method of school music. This course prepares for the city examination in this subject. *Second semester,* S., 8:30-9:30. Given at Hughes High School.

Supervisor Aiken.

Education 36. The Teaching of Physical Training and Hygiene.—This course is for those fitting for positions in elementary schools. It will not be considered sufficient preparation to qualify as a special teacher. The course will include theory and practice of physical exercise, gymnastic games for the school-room and play-ground, school sanitation, and methods of teaching physiology and hygiene in the grades. *Second semester,* S., 10:30-11:30. Given at Hughes High School. Supervisor Ziegler.

Education 38. The Teaching of Penmanship.—This course will present the principles underlying the system of penmanship taught in the Cincinnati public schools, and will show the best methods of teaching it, accompanied by drills for the purpose of securing technique. The course prepares for the city examination in this subject. Given at Hughes High School. *Second semester,* S., 9:30-10:30. Supervisor Steadman.

FOR GRADUATES

Education 3. Secondary Education.—Development of American secondary education; function of the secondary school; program of studies; educational values; formal discipline; construction of

curricula; methods of instruction; introduction to the pedagogy of typical high school subjects. Open to graduates and teachers. S., 9:30-11:30. Professor West.

Education 3p. High School Assisting.—Observation, practice, and conferences for students pursuing Education 3 in candidacy for a diploma, a degree, or the State high school certificate. Three credits. Professor West.

Education 5. Seminar in Secondary Education.—Open to graduates and teachers. The comprehensive purpose is to study from year to year the aims, materials, methods, management, and results of the educative process in secondary schools. When the general subject is *aims,* a theory of secondary education is deduced from the historic development of the schools and the best present practice and ideals; with *materials* as the subject, the class examines the secondary program of studies, historically and critically, and discusses educational values; with *methods* as the subject, the forms of learning and the conduct of the recitation and other instructional exercises are studied in order to discover the fundamentals of method for secondary teaching; with *management* as the subject, attention is directed to the character of adolescence, secondary class-room management, and high school organization and administration; with *results* as the subject, consideration is given to statistical studies and efforts to measure the results of school education and the efficiency of teachers.

In 1915-16 the subject will be: Educational values and types of teaching in the secondary school. W., 4:00-6:00.

Professor West.

Education 7. Seminar.—A study of the principles of scientific management and their application to the problems of school administration. Open to graduates and teachers of experience who are interested in the study of school administration. M., 4:00-5:30.

Professor Burris.

Education 12. Seminar.—Investigations and reports on problems in the theory and practice of teaching. Open only to graduates and teachers in service in the elementary schools or the kindergarten, and to principals or prospective principals who wish to acquaint themselves with modern methods of giving tests and measuring results in education. Special permission of the department necessary. T., 4:00-6:00. Professor Hall and Assistant Professor Mead.

Education 112. Seminar.—Original test work in the elementary schools to evaluate methods. Education 12 is a prerequisite. Special permission necessary. S., 8:30-9:30. Assistant Professor Mead.

BOTANY

For a complete list and full description of the courses offered by the Department of Botany, see the announcement of the McMicken College of Liberal Arts.

1a. Plant Biology.—This course, together with its accompanying laboratory course, satisfies the science requirement in the College for Teachers, and is a prerequisite to Agriculture 1. *First semester,* M., W., F., 8:30-9:30. Professor Benedict.

2a. Plant Biology Laboratory.—Must accompany Course 1a. *First semester.*

Sec. I, M., W., 1:00-4:00.
Sec. II, T., Th., 1:00-4:00.
Sec. III, T., Th., 9:30-12:30.
Professor Benedict and Mr. Giddings.

3b. Plant Biology.—Continuation of Course 1a. *Second semester.*

4b. Plant Biology Laboratory.—Continuation of Course 2a. *Second semester.*

Agriculture 1. Home and School Gardening.—A course of lectures on the principles of plant culture with laboratory work in individual plots, demonstrations at local greenhouses, market gardens, and farms, and practice in all essential processes. Special emphasis is placed upon the conditions to be met in local home and school gardens. Two lectures and one laboratory or field trip per week throughout the year. Hours to be arranged. Mr. ————.

This course satisfies the state requirement in elementary agriculture for elementary teachers in village and rural schools. It is required of all who desire to become school garden inspectors in the Cincinnati schools. Open to those who have passed in Botany 1a, 2a, 3b, 4b.

Botany 102. Applied Biology.—A course in biological principles, illustrated by laboratory and field work on plants. One lecture and two laboratory periods. Three credits. Laboratory fee, $10.00. Lecture, M., 9:30-10:30; laboratory sections at same hours as those in Course 2a. Professor Benedict and Mr. Giddings.

This course is open only to upper classmen in the College for Teachers and is planned particularly to meet the needs of those who were not able to elect a course in biology during their Freshman year. While of definite value to prospective teachers, it will not admit to Agriculture 1. It will admit to Botany 5.

Botany 5. City Botany.—This course is required in the second year of the pre-agricultural course. It is required of all who desire to obtain the recommendation of this department to teach botany

or biology in secondary schools. Open to students who have passed in Botany 1a, 2a, 3b, 4b, or Botany 5. Three credits. M., W., 1:00-4:00. Professor Benedict.

ENGLISH

For a complete list of all the courses offered by the Department of English, see the announcement of the McMicken College of Liberal Arts.

English 29. Materials and Methods in Secondary English.—The organization and adaptation of the work in composition and literature to meet the needs of pupils in the secondary schools. (1) For Seniors and graduates intending to teach English in secondary schools; (2) For teachers in elementary schools preparing to teach secondary English; (3) For teachers in secondary schools already engaged in the teaching of English. S., 9:30-11:30.

Assistant Professor Young.

GEOLOGY AND GEOGRAPHY

For a complete list of the courses offered by the Department of Geology, see the announcement of the McMicken College of Liberal Arts.

1. Introduction to the Earth Sciences.—Minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean, followed by a brief study of the physiography of the United States. Lectures, M., W., F., 8:30-9:30; laboratory, T., Th., 2:00-5:00; M., W., 2:00-5:00; T., Th., 9:30-12:30; T., Th., 1:00-4:00. Assistant Professor Carman, Dr. Bucher, and Assistant.

This course may be elected by students in fulfillment of the science requirement indicated under the head of Admission on page 139.

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lecture, S., 8:30-10:30; field or laboratory, 10:30-12:30. Dr. Bucher.

[16. Advanced Physiography of the United States.] Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

Omitted in 1915-16.

19. Historical Geology.—For teachers who have had Course 14. Lectures, S., 8:30-10:30; field or laboratory, 10:30-12:30.

Assistant Professor Carman.

20. Physiography of Europe.—Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lecture, W., 4:00-6:00. Dr. Bucher.

HISTORY

For a complete list of all the courses offered in the Department of History, see the announcement of the McMicken College of Liberal Arts.

History 15. General Course in American History.—This course, while open to all, is required of those who have not had American history in the high school and who contemplate taking work in the College for Teachers.* The work covers the period from the earliest discoveries to the present time, and is based largely upon a text-book, supplemented by regular reports and occasional lectures. M., W., F., 8:30-9:30.

Associate Professor Cox.

History 35. History of the Trans-Allegheny Region.—A survey of the discovery, exploration, and settlement of this region, and of its development to the Civil War. Lectures and special reports. Open to teachers and advanced students. The course is suggested as preparatory to History 39 and for those who teach local history in the elementary schools. S., 9:30-10:30.

Associate Professor Cox.

HOUSEHOLD ARTS EDUCATION

1. Organization and Administration.—This course deals with the application of educational standards to industrial and household arts subjects as taught in elementary and secondary schools. Throughout the year. M., W., 8:30-9:30.

Professor Strong, Assistant Professor Toaz.

2. Theory and Practice of Teaching Household Arts.—This course considers the special methods of teaching household arts with reference to problems in foods, clothing, and shelter. Lectures, observations, and practice teaching, with required readings. Two hours of class work and two credit hours of practice teaching and observation per semester. Open to Seniors and graduates. Throughout the year. M., W., 10:30-11:30; Conference hour, F., 8:30.

Professor Strong, Assistant Professor Toaz.

* See *Admission*, p. 139.

LATIN

For a complete list of courses offered by the Department of Latin, see the announcement of the McMicken College of Liberal Arts.

8. Latin Teaching.—Practical exercises in teaching secondary Latin. S., one hour to be arranged.

Assistant Professor Semple.

PHILOSOPHY

For a complete list of all the courses offered by the Department of Philosophy, see announcement of the McMicken College of Liberal Arts.

5a. Ethics.—Open to students who have completed two years of work in the University. *First semester.* Sec. I, M., W., F., 10:30-11:30; Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.

Professor Tawney and Assistant Professor Hartmann.

5b. Ethical Interpretations.—Open to students who have had Course 5a. *Second semester.* Sec. I, M., W., F., 10:30-11:30; Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.

Professor Tawney and Assistant Professor Hartmann.

8b. Aesthetics.—The theory of Art and the Beautiful.—Open to students who have had the equivalent of Psychology 1a. *Second semester,* M., W., F., 9:30-10:30. Assistant Professor Hartmann.

11. The History of Philosophy.—For teachers. Throughout the year. S., 9:30-10:30. Professor Tawney.

PSYCHOLOGY

For a complete list of courses offered by the Department of Psychology, see the announcement of the McMicken College of Liberal Arts.

Psychology 11a. Educational Psychology.—A study of the facts of mental life and of their relation to education. Open only to those who are candidates for a degree or a diploma in the College for Teachers. *First semester,* M., W., F., 3:00-4:00.

Professor Breese.

Psychology 11b. A continuation of Psychology 11a. *Second semester,* M., W., F., 3:00-4:00. Professor Breese.

Courses 11a and 11b are prerequisite to entrance upon the study of education, as indicated in professional programs for teachers outlined on pp. 140-144. Those who wish to pursue one of these programs should take these courses in psychology not later than

the Junior year. Those who wish to qualify for a teacher's diploma after graduation from the College of Liberal Arts may take these prerequisite courses in psychology during the Senior year.

Psychology 6a. Advanced Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. Two credit hours. *First semester.* Hours to be arranged.

Professor Breese.

Psychology 9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. Hours to be arranged.

Professor Breese and Mr. Isaacs.

KINDERGARTEN TRAINING

The following courses in Kindergarten Training, not given at the University, may be taken at the Cincinnati Kindergarten Training School.

For conditions governing college students who are fitting primarily for positions in kindergartens, see Program V, page 142.

The Cincinnati Kindergarten Training School issues a special announcement giving full information, a copy of which may be had upon application to the Registrar.

COURSES

Kgtn. 1. Gifts.—This course has for its aim a thorough study of the kindergarten material, a comparative study of typical and original plays or lessons with the gifts, and a study of Froebel's underlying principles. Miss Stone.

Kgtn. 2. Handwork.—This course includes a thorough study of the Froebelian occupations, comparing the same with modern handwork, also the preparation of simple courses adapted for use in the kindergarten. Miss Stone and special teachers.

Kgtn. 3. Rhythms, Songs and Games. Miss Fry.

Each of the above courses includes theory and practice, and is intended to develop resourcefulness and originality in the student, as well as to give technical mastery of kindergarten instrumentalities.

Kgtn. 4. Theory.—This course includes an introductory study of Froebel's Mother Play as the basis for story, song, and game in kindergarten teaching. Also the study of Froebel's writings, for the purpose of discovering the educational laws which form the foundation for child development and personal culture.

Miss Stone, Miss Fry.

Kgtn. 5. Stories.—This course includes lectures, discussions, and reference work concerning the literature of childhood, together with regular practice in the telling of stories.

Miss Simrall, Miss Hobart.

Kgtn. 6a. Program Construction.—This course includes a review of various phases of kindergarten work—with reference to aims, methods, and relative values of materials; discussion of practical problems, such as discipline, care of equipment, and the relation of the kindergarten to the school and to the community.

Miss Bothwell.

Kgtn. 6b. Program Plans.—Study of typical programs and practice reports. Miss Stone, Miss Fry.

Kgtn. 7. Observation.—Carefully supervised observation of the entire morning's work in kindergarten, followed by a discussion of the various activities and the educational principles involved.

Miss Stone, Miss Fry.

Kgtn. 8. Practice Teaching.—A minimum of one-half year (days to conform to the public school calendar) in private, mission, or public school kindergartens, under at least two directors. Opportunity is given for increasing responsibility under careful supervision. Additional practice may be required to demonstrate the student's ability to conduct satisfactorily every phase of kindergarten work. Miss Stone, Miss Fry.

Kgtn. 9. Organization of Mothers' Meetings.—A series of lectures covering the essentials of parliamentary law and the general purpose and subject-matter of mothers' meetings. Short talks suitable for different occasions are prepared and given by the students.

Miss Laws, Miss Stone.

Kgtn. 10. Art.—Rapid sketching on blackboard; brush work in ink and water color; decorative design, charcoal drawing, and clay modeling. Mr. Thompson.

Kgtn. 11. Music.—This course provides for the study and criticism of kindergarten music—both vocal and instrumental—rhythm, and development of ear and tone. Instruction is given in the methods of presentation and interpretation of children's songs, with and without musical accompaniment.

Mr. Aiken, Miss Fry, Miss Rains.

Kgtn. 12. Hygiene and Physical Training.—This work includes lectures by specialists in each of these lines, as well as regular class work in physical training. Its aim is to afford knowledge of sanitation, food, dress, exercise, rest, children's diseases, and emergencies. To give ease and grace of movement, a wise conservation and use

of energy, and to correlate with games played in the kindergarten such movements as are essential to the child's general development.

——— ———.

Kgtn. 13. Directors' Conference.—Lectures, discussions, suggestions for program work.

Occasional talks by prominent kindergartners and specialists in education from other cities.

Miss Bothwell, Miss Stone, Miss Fry.

ART EDUCATION

The following courses of instruction, when not otherwise specified, are given at Hughes High School.

First year students will take Courses 2, 3, 4, and 5 or 9. They will spend the forenoon of each week-day, excepting Saturday, in work at the Art Academy. They will also take, at the University, Education 9 or 11, and Psychology 11a and 11b.

Second year students will take Courses 1, 6, 7, 8, and 5 or 9. On forenoons and afternoons, when not occupied with these courses they will continue work at the Art Academy. At the University they will take Education 6 and 9 or 11.

Art 1. Theory and Practice of Teaching Art.—Principles upon which art teaching is based. The function of art in general education. Consideration of courses of study. Making of lesson plans and outlines of work for elementary and secondary schools. Principles of criticism. Discussion of methods and devices. F., 1:00-3:00. Miss Hyde.

Art 2. Water Colors and Crayons.—Landscape, nature products, pose and still life. Practice in arrangement of still life studies for the sake of good composition and harmony of color. Tu., 1:00-4:00. Mr. Teal.

Art 3. Art Design and Applications.—Study of the principles of balance, rhythm and harmony, in line, dark and light, and color. Fitness of design in form, tone and color, in relation to various applications. Design applied to embroidery, stenciling, weaving, basketry, metal and leather work. W., 1:00-3:00. Miss Hyde.

Art 4. Art Construction and Clay Work.—Paper and cardboard construction. Weaving, stenciling, book binding, block printing, metal and leather work, basketry, pottery, and knife work. Th., 1:00-3:00. Miss Hyde.

Art 5. Pictorial Composition.—Critical study of landscape composition in black and white, in tones of middle gray, and in color. Figure compositions in color. Illustrated talks on the old masters and comparisons of their work with modern art. Instruction in blackboard illustration suited to the needs of teachers of regular subjects in elementary and secondary schools. Given in alternate years. M., 1:30-4:00. Mr. Teal.

Art 6. Design and Classic Ornament.—An advanced study of questions taken up in Art 3. Study of historic ornament. Adaptation of nature forms in design. Influence of materials on design. Theory of color. Designing of interiors with the study of original color schemes. W., 1:30-4:00. Mr. Teal.

Art 7. Observation and Practice Teaching.—Two half-days per week in the public elementary and secondary schools under critical supervision. Webster Public School on Th., 8:30-12:00, Miss ———, critic. Hughes High School, Tuesday forenoon, Miss Hyde, critic.

Art 8. History of Art.—A study and amplification of Reinach's Apollo with the aid of photographs and plates in the Cincinnati Art Museum Library. Students required to make notes, outlines, and chronological tables. Instruction and practice as guides of visitors to the Art Museum. At the Art Museum. Tu., 2:00-4:00. Miss Kellogg.

Art 9. Mechanical Drawing.—Use and care of materials and instruments. Simple geometric problems. Lettering. Scale drawing. Isometric and orthographic projections. Intersections. Machine drawings. House plans and elevations. Tracing and blue printing. Given in alternate years in place of Art 5. M., 1:30-4:00. Supervisor Vogel.

SCHEDULE OF LECTURES, FIRST SEMESTER, 1915-1916

Courses which are starred are open to Freshmen

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT
8:30 A. M.	*Bot. 1a *Chem. 1a Chem. 5a Eng. 6 *Geol. 1 *Ger. 2-Sec. 1 *Greek 9 Hist. 15 *Lat. 1-Sec. ii *Math. 1-Sec. i Phil. 4a Pol. Sc. 11a	Chem. 10a Eng. 2a *French 1-Sec. ii French 26 Geol. 9 Geol. 8 *Ger. 1-Sec. i *Hist. 29 *Lat. 1-Sec. i *Math. 4 *Phys. 2a-Sec. i Pol. Sc. 17a	*Bot. 1a *Chem. 1a Chem. 5a Chem. 29a Eng. 6 *Geol. 1 *Ger. 2-Sec. 1 *Greek 9 Hist. 15 *Lat. 1-Sec. ii *Math. 1-Sec. i Phil. 4a Pol. Sc. 11a	Chem. 10a Eng. 2a *French 1-Sec. ii French 26 Geol. 9 Geol. 8 *Ger. 1-Sec. i *Hist. 29 *Lat. 1-Sec. i *Math. 4 *Phys. 2a-Sec. i Pol. Sc. 17a	*Bot. 1a *Chem. 1a Chem. 5a Eng. 6 *Geol. 1 *Ger. 2-Sec. 1 *Greek 9 Hist. 15 *Lat. 1-Sec. ii *Math. 1-Sec. i Phil. 4a Pol. Sc. 11a	*Frenc Geol. Geol. *Ger. 1 *Lat. 1 *Math Phys.
9:30 A. M.	*Econ. 1 *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec.iii Geol. 2 (Lab.) *Ger. 1-Sec. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-Sec. iii *Math. 1-Sec. ii *Math. 3 Math. 8a Phil. 2a Psy. 8a Soc. Sc. 15 *Span. 6-Sec. i *Zool. 1a	*Bot. 2a-Sec. iii Econ. 11 *Eng. 3 Eng. 10 *French 2-Sec. ii French 4 *Geol. 1-Sec. ii Geol. 2 *Ger. 2-Sec. ii *Ger. 21 Greek 20a Hist. 2 Lat. 2-Sec. ii *Math. 6 Math. 4 *Phys. 2a-Sec. i Phys. 28a Soc. Sc. 5 *Zool. 2a-Sec. iii	*Econ. 1 *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec.iii Geol. 2 (Lab.) *Ger. 1-Sec. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-Sec. iii *Math. 1-Sec. ii *Math. 3 Math. 8a Phil. 2a Psy. 8a Soc. Sc. 15 *Span. 6-Sec. i *Zool. 1a	*Bot. 2a-Sec. iii Econ. 11 *Eng. 3 Eng. 10 *French 2-Sec. ii French 4 *Geol. 1-Sec. ii Geol. 2 *Ger. 2-Sec. ii *Ger. 21 Greek 20a Hist. 2 Lat. 2-Sec. ii *Math. 6 Math. 4 *Phys. 2a-Sec. i Phys. 28a Soc. Sc. 5 *Zool. 2a-Sec. iii	*Econ. 1 *Eng. 5 Eng. 11 *French 2-Sec. i *French 2-Sec.iii Geol. 2 *Ger. 1-Sec. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-Sec. iii *Math. 1-Sec. ii *Math. 3 Math. 8a Phil. 2a Psy. 8a *Span. 6-Sec. i *Zool. 1a	Eng. Eng. *Frenc Geol. Geol. *Ger. 2 Hist. Lat. 2 *Math. Math. Phil. Phys.
10:30 A. M.	Econ. 16a Educ. 1 *Eng. 1-Sec. i *Eng. 1-Sec. ii *Eng. 1-Sec. iii *Eng. 1-Sec. iv *Eng. 1-Sec. v *Eng. 1-Sec. vi *French 11 Geol. 2 (Lab.) *Ger. 2-Sec. iii *Ger. 4-Sec. i Greek 3 Hist. 3 Lat. 2-Sec. i Math. 1-Sec. iii Math. 5 Phil. 1a Phil. 5a-Sec. i Phys. Ed. 2-Sec. i (Men) Pol. Sc. 1 Soc. Sc. 7 *Span. 14	*Bot. 2a-Sec. iii *Econ. 2 Eng. 25-Sec. i Eng. 21 *Geol. 1-Sec. ii *Ger. 3 Greek 12 Greek 13 Hist. 46 Lat. 6 Math. 5 Phys. Ed. 2a-Sec. ii (Men) *Phys. 2a-Sec. i Soc. Sc. 20 *Zool. 2a-Sec. iii	Econ. 16a Educ. 1 *Eng. 1-Sec. i *Eng. 1-Sec. ii *Eng. 1-Sec. iii *Eng. 1-Sec. iv *Eng. 1-Sec. v *Eng. 1-Sec. vi *French 11 Geol. 2 (Lab.) *Ger. 2-Sec. iii *Ger. 4-Sec. i Greek 3 Hist. 3 Lat. 2-Sec. i Math. 1-Sec. iii Phil. 1a Phil. 5a-Sec. i Phys. Ed. 2-Sec. i (Men) Pol. Sc. 1 Soc. Sc. 7 *Span. 14	*Bot. 2a-Sec. iii *Econ. 2 Eng. 25-Sec. i Eng. 21 *Geol. 1-Sec. ii *Ger. 3 Greek 8 Greek 12 Hist. 46 Lat. 5 Math. 5 Phys. Ed. 2a-Sec. ii (Men) *Phys. 2a-Sec. i Soc. Sc. 20 *Zool. 2a-Sec. iii	Econ. 16a Educ. 1 *Eng. 1-Sec. i *Eng. 1-Sec. ii *Eng. 1-Sec. iii *Eng. 1-Sec. iv *Eng. 1-Sec. v *Eng. 1-Sec. vi *French 11 *Ger. 2-Sec. iii *Ger. 4-Sec. i Greek 3 Hist. 3 Lat. 2-Sec. i Math. 1-Sec. iii Math. 5 Phil. 1a Phil. 5a-Sec. i Pol. Sc. 1 *Span. 14	Educ. Eng. 2 Frencl Geol. Geol. Ger. 1 Hist. 3 Phys.
11:30 A. M.	Chem. 12a Eng. 7a *French 1-Sec. i *Ger. 4-Sec. ii *Greek 15 Hist. 27 Ital. 7 Lat. 3 Phil. 5a-Sec. ii *Phys. Ed. 1-Sec. i (Men) *Phys. 26a Pol. Sc. 2a Psy. 1 Soc. Sc. 21 *Span. 6-Sec. ii	Bib. Lit. 8a *Bot. 2a-Sec. iii Eng. 25-Sec. ii Eng. 12 French 3 *Geol. 1-Sec. ii *Ger. 20 Greek 17 *Phys. Ed. 1-Sec. ii (Men) Phys. 3a *Zool. 2a-Sec. iii	Chem. 12a Eng. 7a *French 1-Sec. i *Ger. 4-Sec. ii *Greek 15 Hist. 27 Ital. 7 Lat. 3 Phil. 5a-Sec. ii *Phys. Ed. 1-Sec. i (Men) *Phys. 26a Pol. Sc. 2a Psy. 1 Soc. Sc. 21 *Span. 6-Sec. ii	Bib. Lit. 8a *Bot. 2a-Sec. iii Eng. 25-Sec. ii Eng. 12 French 3 *Geol. 1-Sec. ii *Ger. 20 Greek 17 *Phys. Ed. 1-Sec. ii (Men) Phys. 3a *Zool. 2a-Sec. iii	CONVOCATION	Educ. Geol. 1 Geol. 1 Ger. 10 Greek Hist. 3 Phys. 3

SCHEDULE OF LECTURES, FIRST SEMESTER, 1915-1916—Continued

Courses which are starred are open to Freshmen

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Bot. 2a-Sec. i Bot. 5 Bot. 6a Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) Eng. 26 French 15 Ger. 1-Sec. iii Hist. 13 Phys.Ed.1-Sec.i (Women) Span. 9 Zool. 2a-Sec. i Zool. 15a	Bib. Lit. 9a *Bot. 2a-Sec. ii *Chem. 2a-Sec. ii Chem. 6-Sec. ii Chem. 17(Lab.) Eng. 13a Eng. 18 Eng. 24 *Geol. 1-Sec. iv Hist 20 Phil. 10 *Phys. Ed. 1-Sec. ii(Women) *Phys. 2a-Sec. ii Phys. 4a(Lab.) Pol. Sc. 3 Span. 18 *Zool. 2a-Sec. ii Zool. 19a	*Bot. 2a-Sec. i Bot. 5 Bot. 7a(Lab.) *Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) Eng. 26 French 15 French 5 *Ger. 1-Sec. iii *Hist. 13 *Phys.Ed.1-Sec.i (Women) *Phys. 2a-Sec. iv *Span. 9 *Zool. 2a-Sec. i Zool. 15a	*Bot. 2a-Sec. ii *Chem. 2a-Sec. ii Chem. 6-Sec. ii Chem. 17(Lab.) Eng. 18 Eng. 24 *Geol. 1-Sec. iv Hist 20 Phil. 16 *Phys. Ed. 1-Sec. ii(Women) *Phys. 2a-Sec. ii Phys. 4a(Lab.) Pol. Sc. 3 Span. 18 *Zool. 2a-Sec. ii Zool. 19a	Chem. 12a Eng. 7a *French 1-Sec. i *Ger. 4-Sec. ii *Greek 15 Ital. 7 Lat. 3 Phil. 5a-Sec. ii *Phys. 26a Pol. Sc. 2a Psy. 1 *Span. 6-Sec. ii	
Bot. 2a-Sec. i Bot. 5 Bot. 7a(Lab.) Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) Geol. 1-Sec. i Geol. 9(Lab.) Phys.Ed.2-Sec.i (Women) Psy. 2a Zool. 2a-Sec. i Zool. 16a(Lab.)	Bib. Lit. 9a *Bot. 2a-Sec. ii *Chem. 2a-Sce. ii Chem. 6-Sec. ii Chem. 17(Lab.) Eng. 13a *Geol. 1-Sec. iii *Geol. 1-Sec. iv Phil. 10 Phys. Ed. 2-Sec. ii(Women) *Phys. 2a-Sec. ii Phys. 4a(Lab.) *Zool. 2a-Sec. ii Zool. 20a(Lab.)	*Bot. 2a-Sec. i Bot. 5 Bot. 7a(Lab.) *Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) *Geol. 1-Sec. i Phys.Ed.2-Sec.i (Women) *Phys. 2a-Sec. iv Psy. 2a *Zool. 2a-Sec. i Zool. 16a(Lab.)	*Bot. 2a-Sec. ii *Chem. 2a-Sec. ii Chem. 6-Sec. ii Chem. 17(Lab.) *Geol. 1-Sec. iii *Geol. 1-Sec. iv Phil. 16 Phys. Ed. 2-Sec. ii(Women) *Phys. 2a-Sec. ii Phys. 4a(Lab.) *Zool. 2a-Sec. ii Zool. 20a(Lab.)	Chem. 7(Lab.) Chem. 17(Lab.) Chem.29a(Lab) French 5 French 15 Geol. 8(Lab.) *Ger. 1-Sec. iii *Hist. 13 Psy. 2a *Span. 9	
Bot. 2a-Sec. i Bot. 5 Bot. 7a(Lab.) Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) Geol. 1-Sec. i Geol. 9(Lab.) Greek 6 Greek 7 Psy. 2a(4:30) Zool. 2a-Sec. i Zool. 16a(Lab.)	*Bot. 2a-Sec. ii *Chem. 2a-Sec. ii Chem. 6-Sec. ii Chem. 17(Lab.) *Geol. 1-Sec. iii *Geol. 1-Sec. iv *Phys. 2a-Sec. ii Phys. 4a(Lab.) *Zool. 2a-Sec. ii Zool. 20a(Lab.)	*Bot. 2a-Sec. i Bot. 5 Bot. 7a(Lab.) *Chem. 2a-Sec. i Chem. 6-Sec. i Chem. 7(Lab.) *Geol. 1-Sec. i *Phys. 2a-Sec. iv Psy. 2a(4:30) *Zool. 2a-Sec. i Zool. 16a(Lab.)	*Bot. 2a-Sec. ii *Chem. 2a-Sec. ii Chem. 6-Sec. ii Chem. 17(Lab.) *Geol. 1-Sec. iii *Geol. 1-Sec. iv Greek 5 *Phys. 2a-Sec. ii Phys. 4a(Lab.) Psy. 4 Span. 22 *Zool. 2a-Sec. ii Zool. 20a(Lab.)	Chem. 7(Lab.) Chem. 17(Lab.) Geol. 8(Lab.) Greek 21 *Phys. Ed. 1-Lec. (Men) *Phys. Ed. 1-Lec (Women) Psy. 2a(4:30)	
Econ. 31(4:45) Geol. 1-Sec. i Geol. 9(Lab.) Ger. 7 Greek 6 Greek 7 Math. 25 Math. 10a Pol. Sc. 25 Zool. 16a(Lab.)	Eng. 20 Eng. 30(4:45) French 24 *Geol. 1-Sec. iii Ger.12 *Phys. Ed. 1-Sec. iii(Men) Phys. Ed. 2-Sec. iii(Men) Phys. 10 Zool. 20a(Lab.)	Econ. 30(4:45) Eng. 28 *Geol. 1-Sec. i Geol. 20 Math. 10a Zool. 16a(Lab.)	*Geol. 1-Sec. iii Ger. 6 Math. 25 Phil. 24(4:45) *Phys. Ed. 1-Sec. iii(Men) Phys. Ed. 2-Sec. iii(Men) Psy. 4 Span. 22 Zool. 20a(Lab.)	Chem. 7 Chem. 17 Chem. 29a Geol. 8 (Lab.)	
Econ. 31(6:45) Ger. 7 Math. 25 Pol. Sc. 25	Eng. 20 Eng. 30(6:45) French 24 Ger. 12	Econ. 30(6:45) Eng. 28 Geol. 20 Math. 10a	Ger. 6 Math. 25 Phil. 24(6:45)		

HOURS TO BE ARRANGED

Bot. 10 Bot. 20 Bot. 21 Chem. 11 Chem. 34a Chem. 20 Chem. 21 Chem. 30 Chem. 35a	Eng. 17 French 10 Geol. 7 Geol. 12 Geol. 13 *Greek 2 Greek 4 Greek 16 Ital. 16 Lat. 4 Lat. 7 Lat. 8	Lat. 9 Lat. 10a Lat. 12 Math. 40 Phys. 8 Phys. 16 Phys. 7 Phys. 9	Psy. 9 Psy. 3 Psy. 6a Soc. Sc. 22 Span. 23 Zool. 30 Zool. 31		

Municipal University
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UNIVERSITY OF CINCINNATI RECORD

SERIES I, VOL. XII APRIL, 1916 No. 2, Part 3

UNIVERSITY OF ILLINOIS
OCT 1 1917
ACQUISITION

ANNOUNCEMENT OF COURSES 1917

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1916-1917

UNIVERSITY OF ILLINOIS LIBRARY

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

ISSUED QUARTERLY: JANUARY, APRIL, JULY, OCTOBER.

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UNIVERSITY OF CINCINNATI RECORD

ANNOUNCEMENT OF COURSES

GRADUATE SCHOOL
McMICKEN COLLEGE OF LIBERAL ARTS
COLLEGE FOR TEACHERS

1916-1917

PUBLISHED BY THE UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

TABLE OF CONTENTS

Calendar 6
Departments of the University, ... 8
Administrative Officers, ... 9
General Information:
Fellowships, Scholarships, and Prizes, ... 10
Athletics, ... 12
Carson Field, ... 12
Physical Training for Women, ... 13
Student Organizations, ... 13
Admission:
Special Students, ... 14
Students Entering from Other Colleges and Universities, .. 14
Admission to Advanced Standing, ... 14
Registration, ... 15
General Regulations, ... 17
Fees:
Tuition, ... 18
Special and Irregular Students, ... 19
External Courses, ... 19
Courses for Teachers, ... 19
Summer Premedical Courses, ... 19
Laboratory Fees, ... 20
Graduation Fees, ... 20
Breakage Deposits, ... 20
Course for Teachers of Art, ... 20
Miscellaneous Fees, ... 20
Expenses, ... 22

THE GRADUATE SCHOOL

Faculty and Instructors, ... 23
Admission, ... 24
Instruction, ... 25
Requirements for the Degree of Master of Arts 25
Requirements for the Degree of Doctor of Philosophy, ... 26
Admission to Advanced Standing, ... 27
Special Arrangement for Graduate Students in Lane Seminary and in the Hebrew Union College, ... 27
Fellowships and Scholarships, ... 28
Courses of Instruction:
Anatomy, Astronomy, ... 29
Bacteriology and Hygiene, Biblical Literature, ... 29
Botany 29
Chemistry, ... 30
Economics, ... 32
Education, English, ... 33
Geology and Geography, German, ... 34

Greek, ... 35
History, Latin, ... 36
Mathematics, Mathematics (Applied) 37
Pathology, Philosophy, ... 38
Physics, ... 39
Physiology, Political and Social Science, ... 40
Psychology, ... 41
Romance Languages, ... 42
Zoölogy, ... 43

McMICKEN COLLEGE OF LIBERAL ARTS

Faculty and Instructors, ... 44
Requirements for Admission, ... 46
Entrance Conditions and Entrance Examinations, ... 48
Schedule of Entrance Examinations, ... 49
Admission on Certificate from Accredited Schools, ... 50
List of Accredited Schools, ... 50
List of Recognized Schools, ... 52
Accredited Schools of the North Central Association, ... 52
Description of Subjects Accepted for Admission:
English, ... 52
Latin, ... 55
Greek, French, ... 56
German, ... 58
Spanish, ... 59
Mathematics, ... 60
Physics, ... 61
Chemistry, Zoölogy, ... 62
Botany, Botany and Zoology, ... 63
Physical Geography, Astronomy, ... 64
History, Civics, and Economics, ... 65
Commercial Geography, Bookkeeping, ... 66
Stenography and Typewriting, Commercial Law, Drawing, ... 67
Manual Training, ... 67
Household Arts, ... 68
Requirements for the Bachelor of Arts Degree, ... 68
Outline of Studies in the College of Liberal Arts, ... 70
Advisory System for the Election of Studies, ... 72
Special Arrangements:
Credit for Work Done in the College of Law, ... 73
Six-Year Combined Collegiate and Medical Course, ... 73
Four-Year Combined Collegiate and Commercial Course, ... 73
Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary, ... 73
Credit for Work Done in the Art Academy of Cincinnati, ... 74
Courses of Instruction:
Astronomy, Biblical Literature, ... 75
Botany, ... 76

Chemistry, ... 78
Economics, ... 83
Education, ... 85
English, ... 86
Geology and Geography, ... 90
German, ... 92
Greek, ... 95
History, ... 97
Latin, ... 100
Mathematics, ... 101
Philosophy, ... 103
Physical Education, ... 105
Physics, ... 106
Political and Social Science:
Political Science, ... 109
Social Science, ... 111
Psychology, ... 112
Romance Languages:
French, ... 113
Spanish, ... 115
Italian, ... 116
Zoölogy, ... 116
Summer Premedical Courses, ... 119
Six-Year Combined Collegiate and Medical Course, ... 121
Combined Academic and Commerce Course 122
Drawing, Modeling, and Carving, ... 124

COLLEGE FOR TEACHERS

Joint Committee, Faculty and Instructors, ... 125
General Regulations, ... 126
Ohio School Law, ... 128
Standards Governing Appointment of Teachers, ... 129
Programs Offered:
Program I 132
Program II 133
Program III 134
Program IV 135
Programs V and VI, ... 136
Programs VII, VIII and IX, ... 137
Other Programs, ... 139
Special Courses, Conferences, Appointment Committee, ... 139
Courses of Instruction:
Education, ... 140
Botany, English, ... 146
Geology and Geography, History, Latin, ... 147
Philosophy, Political and Social Science, Psychology, ... 148
Art Education, ... 149
Household Arts Education, ... 150
Kindergarten Training, ... 151
Schedule of Lectures, 1916-17, ... 152

CALENDAR

1916

Sept. 14, Thursday.	Entrance examinations begin.
Sept. 20, Wednesday.	Entrance examinations end. Meeting of Student Advisory Committee.
Sept. 21, Thursday. Sept. 22, Friday. Sept. 23, Saturday.	Registration days for the College of Liberal Arts and the College for Teachers. Liberal Arts Freshmen: Thursday, 9:00-12:00 A.M., 1:00-4:00 P.M.; Friday, 9:00-12:00 A.M. Liberal Arts Sophomores: Friday, 1:00-4:00 P.M.; Saturday, 9:00-12:00 A.M. Juniors and Seniors: Thursday, Friday, or Saturday.
Sept. 23, Saturday.	Registration day for special students.
Sept. 25, Monday.	First semester begins for the College of Liberal Arts and the College for Teachers.
Sept. 25, Monday.	First registration day for the Graduate School.
Sept. 30, Saturday.	Last registration day for the Graduate School.
Oct. 7, Saturday.	Examinations for advanced standing in French, German, Greek, and Spanish.
Oct. 7, Saturday.	Registration for the first semester closes at 12:30 P.M.
Nov. 18, Saturday.	Mid-term reports due in the Registrar's office.
Nov. 30, Thursday.	Thanksgiving Day: a holiday. Recess of three days.

Recess from December 25, 1916, to January 6, 1917, Inclusive.

1917

Jan. 8, Monday.	Classes resumed.
Jan. 15, Monday.	Entrance examinations begin.
Jan. 20, Saturday.	Entrance examinations end.
Jan. 29, Monday.	First semester examinations begin.
Feb. 8, Thursday.	First semester examinations end.
Feb. 9, Friday.	Registration day for the second semester of the College of Liberal Arts and of the College for Teachers.

FEB. 10, SATURDAY.	No classes.
FEB. 12, MONDAY.	Second semester begins for the College of Liberal Arts and the College for Teachers.
FEB. 12, MONDAY. FEB. 13, TUESDAY. FEB. 14, WEDNESDAY.	Registration days for the second semester of the Graduate School.
FEB. 22, THURSDAY.	Washington's Birthday: a holiday.
FEB. 24, SATURDAY.	Examinations for advanced standing in French, German, Greek, and Spanish.
FEB. 24, SATURDAY.	Registration for the second semester closes at 12:30 P.M.
MARCH 31, SATURDAY.	Mid-term reports due in the Registrar's office.
APRIL 5, THURSDAY. APRIL 6, FRIDAY. APRIL 7, SATURDAY.	Easter recess for the College of Liberal Arts.
MAY 4, FRIDAY.	Oratorical Contest for Jones Prizes.
MAY 30, WEDNESDAY.	Memorial Day: a holiday.
JUNE 15, FRIDAY.	Second semester ends.
JUNE 16, SATURDAY.	University Commencement Day.
JUNE 18, MONDAY.	Entrance examinations begin.
JUNE 23, SATURDAY.	Entrance examinations end.

DEPARTMENTS OF THE UNIVERSITY

The University comprises the following departments:

GRADUATE SCHOOL,

McMICKEN COLLEGE OF LIBERAL ARTS,

COLLEGE FOR TEACHERS,

COLLEGE OF ENGINEERING,

COLLEGE OF MEDICINE (The Ohio-Miami Medical College and the Clinical and Pathological School of the Cincinnati Hospital),

COLLEGE OF COMMERCE,

SCHOOL OF HOUSEHOLD ARTS.

For special announcement of the various departments, except the Medical College, and for further information, address:

THE DIRECTOR OF ADMISSIONS
UNIVERSITY OF CINCINNATI
CINCINNATI, OHIO

For special announcement of the Medical College, address:

THE DEAN OF THE COLLEGE OF MEDICINE
CLIFTON AVE., CINCINNATI, OHIO

ADMINISTRATIVE OFFICERS

OF

THE GRADUATE SCHOOL, THE COLLEGE OF LIBERAL ARTS, AND THE COLLEGE FOR TEACHERS

CHARLES WILLIAM DABNEY, Ph.D., LL.D., President of the University
Office, 10 McMicken Hall.

FRANK W. CHANDLER, Ph.D., Dean of the College of Liberal Arts
Office, 8 McMicken Hall.

JOSEPH E. HARRY, Ph.D., ... Dean of the Graduate School
Office, 4 McMicken Hall.

WILLIAM P. BURRIS, A.M., L.H.D., Dean of the College for Teachers
Office, 2 McMicken Hall.

FREDERICK C. HICKS, Ph.D., Dean of the College of Commerce and Supervisor of the Evening Academic Courses
Office, 33 McMicken Hall.

EMILIE WATTS MCVEA, A.M., ... Dean of Women
Office, 12 McMicken Hall.

JERMAIN G. PORTER, Ph.D., ... Director of the Observatory
The Observatory, Mt. Lookout.

HENRY S. WEST, Ph.D., ... Director of School Affiliation
Office, 2 McMicken Hall.

ERNEST LYNN TALBERT, Ph.D., ... Director of Admissions
Office, 3 McMicken Hall.

ALFRED BRODBECK, ... Director of Physical Education
Gymnasium Building.

DANIEL LAURENCE, B.S., ... Secretary of the University
Office, 5 McMicken Hall.

CHARLES ALBERT READ, A.B., Librarian of the University Library
Van Wormer Library Building.

LELIA G. HARTMAN, B.L., ... Registrar
Office, 7 McMicken Hall.

ALMA DIECKMAN, A.B., ... Assistant Registrar
Office, 7 McMicken Hall.

GENERAL INFORMATION

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

THE GRADUATE SCHOOL

THE D. A. R. FELLOWSHIP IN AMERICAN HISTORY. This fellowship was established in 1900 by the Daughters of the American Revolution, and yields an income of $100 per year.

THE HANNA FELLOWSHIP IN PHYSICS. This fellowship was established by Mrs. Henry Hanna and Miss Mary Hanna in 1906. Its value is $500 a year.

THE ALLIANCE FRANÇAISE SCHOLARSHIP, of $300, was established in 1904 by the Alliance Française of the city of Cincinnati. It is awarded to the student in the Department of Romance Languages showing the greatest proficiency in French. The successful candidate is required to attend the summer course of instruction given by the Alliance Française in Paris.

THE ARMSTRONG-HUNTER MEMORIAL FUND, valued at $1,000, was established in 1910 in memory of Miss Sarah J. Armstrong and Miss Clara Hunter, by eighty of their former pupils. This fund has been used to found a scholarship in the Department of English Literature in the Graduate School, for a woman who is a graduate of the University.

In addition to the above, the University offers ten scholarships in several departments which exempt their holders from the payment of tuition fees.

THE McMICKEN COLLEGE OF LIBERAL ARTS

THE CORNELIUS GEORGE COMEGYS SCHOLARSHIP, with an income of fifty dollars, was founded in 1899 by the Old Endowment Fund Association, which was composed of the alumni of the University. This scholarship is awarded annually to a meritorious undergraduate.

THE MCMICKEN HONORARY SCHOLARSHIPS are awarded annually to the five Juniors who have the best scholastic standing, according to the records in the Registrar's office.

THE THOMS HONORARY SCHOLARSHIPS are awarded annually to the six Sophomores and the six Freshmen who have the best scholastic records.

THE JULIUS FLEISCHMANN SCHOLARSHIPS. Thirteen scholarships of $75 each, offered for eight successive years (1909-1915) by Mr. Julius Fleischmann. Ten scholarships of $100 each (tuition for non-residents increased from $75 to $100), offered for the year 1916-17. They cover the first year's tuition, in the College of Liberal Arts, of ten non-residents who are members of the graduating classes of the accredited schools outside of Cincinnati.

THE JONES PRIZES. The first Jones Prize of forty dollars was founded in 1892 by the Honorable Frank J. Jones, and is awarded annually to that member of the Senior class in the College of Liberal Arts who writes and pronounces the best English oration. The subjects are chosen by the Dean and the Chairman of the Board of Directors. A committee consisting of three citizens of Cincinnati is appointed by the Chairman of the Board of Directors to judge the contest. The second Jones Prize of twenty dollars was founded by Mr. Jones in 1901. It is awarded to that member of the Senior class whose oration is judged by the committee to be second in merit. These prizes are permanently endowed.

THE EDWARD MILES BROWN PRIZE FOR EXCELLENCE IN ENGLISH. This prize of fifty dollars was established in 1908, by a provision of the will of the late Professor Edward Miles Brown. It is awarded annually to that member of the Senior class who has attained the highest excellence in English during his four years' undergraduate course.

THE HENRY HOCHSTETTER PRIZE IN CHEMISTRY. This prize was established in 1909 by Mr. Robert Hochstetter, of the Class of 1895, in memory of his brother, Henry Hochstetter. It is to be awarded annually for the best graduating thesis in Chemistry, and is open to both students of Liberal Arts and Engineering. The successful candidate is nominated by a committee consisting of the head of the Department of Chemistry and two members of the Cincinnati Section of the American Chemical Society.

THE ROBERT PATTERSON MCKIBBIN MEMORIAL PRIZE, a gold medal of the value of twenty-five dollars, was established in 1911 by the Reverend William McKibbin and family, in memory of their son Robert Patterson McKibbin, who died in 1910, while a member of the Junior class of this University. This prize aims to hold up before the male students of the University the ideals of manhood. It will be awarded to that young man of the Senior class who, in the judgment of the faculty, is the best embodiment of these ideals.

THE CINCINNATI PRIZE. This prize, of the value of $20, was established in 1912 by the National Municipal League. It is awarded

to that student in the University who submits the best original essay dealing with the municipal government or the civic life of Cincinnati.

THE UNION BETHEL SCHOLARSHIPS IN SOCIAL SCIENCE. Four scholarships of $50 each, offered for the years 1913-14, 1914-15, 1915-16, by Mr. J. O. White, resident director of the Union Bethel Settlement. These scholarships are awarded to four advanced students in the Department of Social Science who carry on sociological investigations at the Union Bethel.

THE CINCINNATI LAW SCHOOL SCHOLARSHIP. A scholarship open to Seniors who intend to enter the Cincinnati Law School the year after graduation.

THE TAFT SCHOLARSHIP. This scholarship of $75 was established in May, 1914, with the proceeds of the sale of the press equipment, which was originally donated by Mr. Charles P. Taft. It is awarded to a worthy student selected by the President of the University.

PHYSICS DEPARTMENT SCHOLARSHIPS. A sum of money has been donated to the Department of Physics for scholarships to be given in recognition of excellent work.

For the fellowships, scholarships, and prizes of the various colleges, consult their several announcements.

ATHLETICS

Athletics are so controlled in the University that they play an important part in the college life of the student without seriously interfering with his interest in class-room work.

All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: three hours per week for all members of the Freshman class, and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A large part of the work is done out of doors during good weather, and such games as football, baseball, basket ball, tennis and track athletics are a part of the students' training. Lessons in boxing, wrestling, and fencing are also given to students interested in this form of exercise.

All athletics and gymnastics are in charge of the Director of Physical Education and his assistants.

CARSON FIELD

An Athletic Field has recently been provided, which is one of the best college athletic fields in the country. It contains a baseball

diamond, a football gridiron, and a quarter-mile cinder track, with a one hundred and twenty-yard straight-away extending in front of the new grand stand. The proximity of this field to the gymnasium makes it a particularly valuable addition to the athletic equipment of the University. Its location between three hilltops, which form a natural amphitheater, affords opportunity for thousands of people to view the games.

The new gymnasium with its modern equipment—cork-covered running track, white-tiled swimming pool, and spacious locker rooms—is the most complete institution of its kind in the West.

PHYSICAL TRAINING FOR WOMEN

A special instructor has charge of the work in Physical Training for young women, which is required during the Freshman and Sophomore years. The work in the gymnasium is supplemented during the fall and spring with outdoor games.

STUDENT ORGANIZATIONS

The following student organizations met regularly throughout the academic year, 1915-16:

The Academic Club, composed of the men of the College of Liberal Arts; The Athletic Council; Blue Hydra, a permanent organization devoted to the study of Biology; The Chemical Engineer's Club; The Chemist's Club; The Co-op Club; The Debating Council; The Dramatic Club; The French Club; The Freshman Girl's Club; The German Club; The History Club; The Junior Girl's Club; The Literary Society; Menorah Society (a branch of the Intercollegiate Menorah Association); Men's Glee and Mandolin Clubs; Men's Pan Hellenic Association; The Phrenecon Society; The Senior Girl's Club; The Sophomore Girl's Club; The Speaker's Club, an oratorical and debating society composed entirely of young men; The Student Section of the American Society of Mechanical Engineers; The Student Section of the American Institute of Electrical Engineers; The University Club, composed of representatives from the student clubs, the fraternities, and the four classes; Women's Glee Club; Women's Pan Hellenic Association; a chapter of the Y. W. C. A.; a chapter of the Y. M. C. A.; The Civics Club.

The Woman Student's League is an organization open to all women students of the University and to the women of the faculty. Regular meetings are held, at which lectures of note address the members on subjects connected with the general and economic interests of women.

A Student Tribunal for Self-Government exists in the College of Engineering. It consists of five members—three Seniors and two Juniors.

The Three Arts Club, an organization for young women students of music, painting, and the drama, admits University students who specialize in English, the drama, or public speaking. Saturday meetings and other occasions afford delightful opportunities artistically and socially. Annual dues, 50 cents. Application for membership should be made to Miss Edith S. Neff, 104 E. Auburn Avenue. Out-of-town members may live at the Three Arts Club House, within walking distance of the University, for from four to eight dollars a week. Application and two letters of reference should be sent to the chairman of the House Committee, Mrs. C. H. Davidson, Auburn Hotel, Cincinnati, Ohio.

ADMISSION

Special Students.—Persons at least twenty years of age and qualified to do University work may be admitted as special students to lectures and laboratory courses in the College of Liberal Arts and in the College for Teachers. They will be required to furnish documentary evidence to the Director of Admissions, and to satisfy the heads of the departments concerned, of their ability to carry on successfully the courses which they desire to enter.

Before any special student may become a candidate for a degree he must satisfy the entrance requirements. All special students are amenable to the same regulations as apply to regular students in matters of examination, probation, discipline, etc. (See probation rule, page 17.)

Students Entering from Other Colleges and Universities.—An undergraduate of a college or university desiring to enter the McMicken College of Liberal Arts or the College for Teachers must present to the Director of Admissions satisfactory evidence that he has done a sufficient amount of preparatory work to meet the regular entrance requirements, together with a certificate of honorable dismissal from the college or university last attended. He will be given credit for work of university grade in accordance with the provision for "Admission to Advanced Standing."

Admission to Advanced Standing.—Students may be admitted to advanced standing upon presentation of a certificate from a college of approved standing. All applications for advanced standing must be made within three weeks after matriculation to the Director of Admissions, and must be accompanied by a statement of the work done, signed by the proper officials of the college from which the applicant comes, and by a marked copy of the catalogue or by a written description in detail of the courses for which advanced credits

are desired. In courses where note books or drawings or both are required, these also must be presented. The students applying for advanced standing must first have satisfied the entrance requirements the same as regular students.

Surplus Matriculation Credit

Students who bring from accredited preparatory schools credits in given subjects in excess of the requirements for matriculation, must pass a written examination in the University in the subjects covered by such credits and attain a grade of at least "C" in the same, before the equivalent in university credit may be counted toward the one hundred and twenty-four units required for graduation.

In lieu of such examination for university credit in the above-mentioned matriculation subjects, the faculty may accept as a sufficient evidence of proficiency, a thoroughly satisfactory record (at least "C") in higher work in the same subject, taken in the University in the Freshman year.

The preparatory subjects in which university credits may be acquired are French, German, Greek, and Spanish.

The examinations for advanced standing in these subjects will be held on the second Saturday after the opening of each semester.

REGISTRATION

Freshmen and Sophomores will register in 1916 with the Student Advisory Committee as follows:

FRESHMEN: Thursday, September 21, 9:00-12:00 A.M. or 1:00-4:00 P.M.; Friday, September 22, 9:00-12:00 A.M.

SOPHOMORES: Friday, September 22, 1:00-4:00 P.M., or Saturday, September 23, 9:00-12:00 A.M.

Upper classmen will register with their Advisors on either September 21, 22, or 23.

Special students will register on Saturday, September 23.

In 1917, all students will register on Friday, February 4.

Students registering on any other days than those designated above will be required to pay a registration fee of one dollar.

No person will be admitted to any course after the beginning of the semester, unless a good and sufficient excuse for not entering at the opening of the semester be presented to the Dean; and *in no event will any person be permitted to enter the work of any semester after the close of the second week of that semester.* In accordance with this regulation, no person will be admitted to the work of the first semester of 1916-17 after twelve-thirty o'clock on October 7, 1916; for the second semester, no one will be admitted after twelve-thirty o'clock on Saturday, February 24, 1917.

Directions for Registration

Freshmen

1. Take to the Advisory Committee for the Election of Studies the Certificate of Admission received from the Director of Admissions, and receive from the Committee a Course Card; after consultation, fill out the Course Card in accordance with the rules and regulations of the Advisory Committee (see page 72);

2. Take the Certificate of Admission, the Registration Blank, and the Course Card to the Registrar;

3. Pay the library fee (also tuition and laboratory fees when such are required) to the Clerk of the Board;

4. Receive from the Clerk of the Board a receipt for matriculation;

5. File the Course Card received from the Advisory Committee in a box prepared for that purpose in the Registrar's office.

Sophomores

Every Sophomore must register with his own Adviser in accordance with the rules and regulations of the Advisory Committee (see page 72). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Upper Classmen

Every upper classman must fill out his Course Card under the direction of his Adviser (see page 72). He must then fill out the Registration Blank and present that and his Course Card to the Registrar, who will give in exchange a Card of Matriculation Fees, which must in turn be presented to the Clerk.

Special Regulations

On the Course Card each course must be designated by the department and the number of the course, special title, and the number of hours' credit, e. g.:

English 1: Rhetoric and Composition.....3
Mathematics 1: Algebra, Trigonometry, and Analytical Geometry 4

In filling out election blanks special care should be taken to note the advertised hours of courses, in order that conflicts may be avoided.

All students who expect to become teachers should confer with the Dean of the College for Teachers before filling out their Course Cards.

No change will be permitted on the Course Card after the expiration of three days from the last day of registration.

All Course and Schedule Cards must be filled out and deposited in the boxes provided for that purpose before four o'clock on the last registration day.

GENERAL REGULATIONS

Each student shall, at the beginning of the year, leave his local address at the office of the Registrar and shall promptly report all subsequent changes of address.

Unit of Instruction.—The unit of instruction is one hour per week for one semester. Two and one-half hours of actual work in the laboratory, shop, or drafting-room, are considered equivalent to one recitation hour and the preparation therefor. Credit will be given for the number of hours officially published with the course, and for no more. University work not regularly registered is forbidden.

Absences in the College of Liberal Arts.—All absences of students, from any cause whatsoever, are recorded in the Registrar's office. If thirty or more absences are recorded against a student, two extra credits must be made in order to obtain the A. B. degree. No absences are excusable except those incurred by students representing the University in some public exercise outside of the city. Application for these excuses must be made to the Dean in advance.

Probation.—A student in the College of Liberal Arts who receives a grade below "D" in one-half of his work at the mid-term, or at the end of any semester, shall be put upon probation with restricted work for the next half semester of college work. Such probation cannot be removed until the student has obtained a passing grade in all subjects that he is permitted to carry. If a student so probationed fails to secure this passing grade after two successive semestral periods, he shall cease to be a member of the University. Special students, however, who take six hours of work or less, and make a grade below "D" in one-half of their work at the end of the first semester, *may* be allowed to continue without probation until the close of the year.

Grades.—The scale of marks for recording grades is as follows: A, 90-100; B, 80-89; C, 70-79; D, 60-69, passed; E, 50-59, conditioned; F, 0-49, failed.

In case a student withdraws from the University during any semester, credit will not be given for any of the work elected for that semester.

Honorable Dismissal.—It is required as a condition of honorable dismissal, that every student who wishes to withdraw from the

University shall submit to the Registrar a written request to that effect.

A copy of the "Rules for the Guidance of Students" may be obtained at the Registrar's office.

FEES

Tuition in the Graduate School, the College of Liberal Arts, and the College for Teachers is free to regular students who are citizens of Cincinnati.

All fees must be paid *in advance* to the Clerk of the Board of Directors during the days of registration. If fees are not paid promptly, the Deans are authorized to exclude students from attendance upon their classes. *No University fees are refunded.*

Tuition Fees

If tuition fees are not paid during registration days, but are paid within the two weeks succeeding the last registration day, a penalty of $7.50 is imposed; if not paid then, but if paid within the following two weeks, the penalty is $12.50. If not paid within four weeks after the last registration day, further attendance upon classes will be refused.

All regular non-resident students in the College of Liberal Arts and in the College for Teachers, who entered prior to September, 1916, are charged a tuition fee of $75.00 per year, payable in installments of $37.50 per semester. All regular non-resident students entering the University in September, 1916, and thereafter, will be charged a tuition fee of $100.00 per year, payable in installments of $50.00 per semester.

Students in the College of Liberal Arts who are citizens of the city of Cincinnati, and elect any work whatsoever in the College of Engineering, are charged the full tuition fee of $37.50 per semester.

Tuition in the Evening Academic Courses is free (a) to all citizens of Cincinnati; (b) to all teachers* who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $5.00 per course, per year. Non-residents, other than teachers, are charged tuition at the rate of $5.00 per credit hour per semester. A credit hour is one hour's work a week carried through a semester or half year. Laboratory fees will be charged for courses in the laboratory sciences.

When the right of a student to register as a citizen of Cincinnati is in doubt, he must raise the question at once with the Registrar, and obtain the blank provided for the purpose. He shall then present his case in writing to the proper authorities who will pass upon the

*Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

matter. No person can gain residence in Cincinnati by enrolling as a student in the University.

If a student misrepresents himself as a citizen of Cincinnati at the time of registration, he shall be assessed the sum of $10.00 in addition to the tuition for that semester.

Fees for Special and Irregular Students

All special students, and irregular students (i. e., students who have satisfied the entrance requirements, but take less than twelve hours a week by special permission), in the College of Liberal Arts and in the College for Teachers, who are citizens of Cincinnati, are charged tuition at the rate of $3.00 per credit hour, per semester, in advance. A credit hour is one hour's work a week carried through a semester or half year. For instance, tuition for a three-hour course would amount to $9.00 a semester, or $18.00 a year. If not paid within one week after the last registration day, an additional fee of $1.00 will be charged. If not paid within four weeks after the last registration day, attendance upon classes will be refused.

All non-resident special and irregular students in the College of Liberal Arts, in the College for Teachers, and in the Graduate School, are charged tuition at the rate of $5.00 per credit hour, per semester, in advance, i. e., tuition for a three-hour course would amount to $15.00 per semester or $30.00 per year.

External Courses

A fee of five dollars will be charged for admission to *each* External Course.

Courses for Teachers*

Teachers enrolled in the Graduate School, the College of Liberal Arts, or the College for Teachers, pay the regular library fee of $5.00 per year. Tuition in these departments is free (a) to all teachers in public schools who are citizens of the city; (b) to all teachers who, although non-residents, are engaged in teaching in the public schools of the city. All other teachers are charged tuition at the rate of $5.00 per course, per year, payable in advance.

Summer Premedical Courses

Tuition in these summer courses is free to premedical students who are citizens of Cincinnati. Non-residents and students registered in the professional schools pay a tuition fee of $25.00. The laboratory fee in chemistry for each course is $10.00. A deposit of $10.00 is required in chemistry to cover the cost of breakage; whatever is left, after deductions for breakage have been made, will be returned. The laboratory fee in physics or zoology is $15.00. There are no other expenses connected with these courses.

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*Librarians or assistants in the Public Library are given the same rates as teachers in the public schools.

Laboratory Fees

All laboratory fees are payable strictly *in advance.*

A student shall not be permitted to enter a laboratory course until he presents to the instructor in charge a receipt for the payment of his laboratory fee.

Art, $5.00 per semester.

Botany, $10.00 per semester.

Chemistry, $15.00 per semester; breakage deposit, $10.00.

Geology, $5.00 per semester; $2.50 per semester for a course having but one laboratory period per week.

Metallurgy, $7.50 per semester.

Physics, $10.00 per semester; $5.00 per semester for a course having but one laboratory period per week.

Psychology, $5.00 per semester.

Zoology, $10.00 per semester.

Graduation Fees

All graduation fees must be paid at least two weeks before the day appointed for conferring the degree.

A graduation fee of $5.00 is charged every candidate for an undergraduate degree. A graduation fee of $10.00 is charged a candidate for the degree of master of arts, and a fee of $20.00 is charged for the degree of doctor of philosophy, and for the degree of doctor of medicine.

Breakage Deposits

At the beginning of the year, a breakage deposit of $10.00 will be required of each student who takes chemistry. Five dollars of this amount must be kept permanently upon deposit until all accounts with the Department of Chemistry have been settled. For the remaining $5.00 a coupon ticket will be issued, with which supplies and apparatus may be obtained at the store-room. Should this coupon-ticket become exhausted, the student must purchase a new ticket ($5.00) before supplies will be issued to him at the store-room.

Course for Teachers of Art

The fees in the Special Course for Teachers of Art are as follows: matriculation fee, $5.00; tuition fee for non-residents, $18.00 (for one year's instruction in psychology and the history of education); laboratory fee, $25.00 per year; tuition fee, payable at the Art Academy, $25.00 per year.

Miscellaneous Fees

Gymnasium Fee.—A gymnasium fee of $5.00 per annum ($2.50 per semester) will be charged all students in the College of Liberal Arts, in the College for Teachers, and in the College of Engineering,

taking six or more hours of work per week. The same fee will be charged all men in the Graduate School who elect twelve hours of work per week.

A fee of $5.00 per annum ($2.50 per semester) will be charged all other students in the University who desire to avail themselves of the privileges of the gymnasium.

During the temporary use of the men's gymnasium by the classes for women, a gymnasium fee of $1.00 per semester will be charged the women students.

Contingent Fee.—A contingent fee of $10.00 per annum ($5.00 per semester) is charged all regular non-resident students in the College of Liberal Arts, the College for Teachers, and the Graduate School, while a fee of $5.00 ($2.50 per semester) is charged all non-resident special or irregular students. (To become effective with students entering the University in September, 1916.)

Library Fee.—All students in the Graduate School, in the Colleges of Liberal Arts and Engineering, except fifth year coöperative students, in the College for Teachers, in the College of Commerce, in the School of Household Arts, and in the Evening Academic Courses, must pay a library fee of $5.00 per year at the opening of the session.

Late Registration.—Students who apply for registration or submit schedules of study on days other than those designated will be required to pay a fee of $1.00.

Special Examinations.—A fee of $1.00 will be charged for each supplemental examination for the removal of conditions, and this fee must be paid even though the condition is removed without a supplemental examination. A fee of $5.00 will be charged for entrance examinations on days other than those specified in the calendar. Every candidate who applies for the removal of a condition must present to the head of the department in which the condition occurred a receipt showing that the candidate has paid the fee of $1.00, before the said head of department may report the removal of a condition to the Registrar.

EXPENSES

	Graduate School Liberal Arts, or College for Teachers	Engineering		Medicine	Commerce	Household Arts
Tuition,		Reg.	Coöp.			
Res.		$ 75	$ 60	$150	$ 50	$ 75
Non-Res.	$100	100	100	150	75	100
Lib'y Fee,	5 00	5 00		.....	5 00	5 00
Gym. Fee,	5 00	5 00		.....		5 00
Contingent Fee						
Non-Res.:						
Reg.	10 00	10 00		.....	5 00	10 00
Spec. ..	.....	5 00		.....	.....	5 00
Irreg. ..	5 00	.....		.....	.....	.....
Even. ..	.....	.....		.....	.....	.....
Lab. Fees,	*	$35 to $45		.....	†	$10 to $20‡ 5 to 10§ 40¶
Books	$20 to $25	$25 to $30		$45 to $60	$20 to $25	$10 to $15
Board and Room, per week,	$5 to $8	$5 to $8		$5 to $8	$5 to $8	$5 to $8
Total Expense, per year,	$325 to $485	$350 to $500		$375 to $500	$275 to $400	$325 to $425

The Secretary of the University will furnish information regarding suitable boarding places in the vicinity of the University.

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*Laboratory fees vary according to the courses taken.
†Laboratory fees included in the tuition.
‡Foods laboratory fees.
§Textile laboratory fees.
||Science laboratory fees.

THE GRADUATE SCHOOL

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph.D., LL.D., President of the University
JERMAIN GILDERSLEEVE PORTER, Ph.D., Director of the Observatory and Professor of Astronomy
FREDERICK CHARLES HICKS, Ph.D., Sinton Professor of Economics and Commerce
HARRIS HANCOCK, Ph.D., D.Sc., ...Professor of Mathematics
JOHN MILLER BURNAM, Ph.D., ...Professor of Latin
MAX POLL, Ph.D.,.....Professor of the Germanic Languages
JOSEPH EDWARD HARRY, Ph.D., Professor of Greek and Dean of the Graduate School
MERRICK WHITCOMB, Ph.D.,.....Professor of History
LOUIS TRENCHARD MORE, Ph.D.,.....Professor of Physics
BURTIS BURR BREESE, Ph.D.,.....Professor of Psychology
WILLIAM PAXTON BURRIS, A.M., L.H.D., Professor of the History and Principles of Education
JOHN WILLIAM HALL, A.M.,.. Professor of Elementary Education
STEPHEN ELMER SLOCUM, B.E., Ph.D.....Professor of Applied Mathematics
NEVIN M. FENNEMAN, Ph.D., Professor of Geology and Geography
LAUDER WILLIAM JONES, Ph.D.,.....Professor of Chemistry
GUY ALLAN TAWNEY, Ph.D.,.....Professor of Philosophy
FRANK WADLEIGH CHANDLER, Ph.D.,....Professor of English and Ropes Professor of Comparative Literature
PHILLIP OGDEN, Ph.D.,.....Professor of Romance Languages
PAUL GERHARDT WOOLLEY, B.S., M.D., Mary M. Emery Professor of Pathology
MARTIN H. FISCHER, M.D., Joseph Eichberg Professor of Physiology
HENRY MCELDERRY KNOWER, Ph.D., Francis Brunning Professor of Anatomy
HARRIS MILLER BENEDICT, Ph.D., ...Professor of Botany
HENRY S. WEST, Ph.D.,.....Professor of Secondary Education
SELDEN GALE LOWRIE, Ph.D.,.....Professor of Political Science
WILLIAM BUCHANAN WHERRY, A.B., M.D., Professor of Bacteriology and Hygiene
——— ..... Professor of Zoology
HARRY SHIPLEY FRY, Ph.D., ...Associate Professor of Chemistry
SAMUEL JAMES MCINTOSH ALLEN, Ph.D., Associate Professor of Physics

Isaac Joslin Cox, Ph.D., ... Associate Professor of History
Claude M. Lotspeich, Ph.D., ... Associate Professor of German
Harry Lewis Wieman, Ph.D., ... Associate Professor of Zoology
Henry Max Goettsch, Ph.D., Associate Professor of Industrial Chemistry
Edward F. Malone, A.B., M.D., . . Associate Professor of Anatomy
Emilie Watts McVea, A.M., ... Assistant Professor of English
Charles Napoleon Moore, Ph.D., Assistant Professor of Mathematics
J. Ernest Carman, B.S., M.D., . . Assistant Professor of Geology
Ralph Emerson Bassett, A.M., Assistant Professor of Romance Languages
Bertha K. Young, A.M., ... Assistant Professor of English
Clyde William Park, A.M., ... Assistant Professor of English
William Hammond Parker, Ph.D., Assistant Professor of Economics and Social Science
Cyrus DeWitt Mead, Ph.D., . . Assistant Professor of Elementary Education
Henry G. Hartman, Ph.D., ... Assistant Professor of Philosophy
Clarence Oran Gardner, Ph.D., Assistant Professor of Political Science
Clarence D. Stevens, A.M., ... Assistant Professor of English
Ernest Edgar Thum, E.M., ... Assistant Professor of Metallurgy
Edward B. Reemelin, A.B., M.D., Assistant Professor of Physiological Chemistry
James Dysart Magee, Ph.D., . . Assistant Professor of Economics
Frank K. Sechrist, Ph.D., ... Assistant Professor of Education
Selby Frame Vance, A.M., D.D., Lecturer on Biblical Literature
Cora May Box, A.M., ... Instructor in Zoology
Walter H. Bucher, Ph.D., ... Instructor in Geology
Ernest Lynn Talbert, Ph.D., Instructor in Psychology and Director of Admissions
Albert Watson Davison, Ph.D., Instructor in Physical Chemistry
Schachne Isaacs, A.M., ... Instructor in Psychology
Orville Turner Wilson, Ph.D., ... Instructor in Botany
Reginald Charles McGrane, Ph.D., ... Instructor in History
Hubertis Maurice Cummings, Ph.D., ... Instructor in English
Joseph Clark Stevenson, B.S., ... Instructor in Zoology
————————, ... Instructor in French and Italian

INFORMATION FOR STUDENTS

ADMISSION

The degree of Bachelor of Arts conferred by the University of Cincinnati entitles its holder to admission to the Graduate School. The University also offers its degrees of Master of Arts and Doctor

of Philosophy to graduates of other institutions of high standing who shall complete their work in conformity with the regulations of the Graduate School. Students will not be admitted to the Graduate School after the third week of the semester.

INSTRUCTION

The work of each candidate for a graduate degree shall be under the direction of an Advisory Committee, composed of the Dean of the Graduate School and the heads of the departments in which the work is taken.

The unit of instruction in the Graduate School is one hour a week for one semester.

The nature of the graduate student's work will vary with the subjects pursued, but it is intended that the student's work shall require a regular attendance at class meetings or in the laboratory, and shall not be in any respect of that character of work known as "in absentia." No credit will be given toward a graduate degree for work done prior to the conferring of the degree of Bachelor of Arts or its equivalent. No course in which a student obtains a grade below "B" will count for credit in the Graduate School.

REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS

The work for the Master's degree requires at least one full year's residence in the Graduate School. A candidate for this degree, at the time of his admission to the Graduate School, and with the approval of the head of the department in which he elects his major work, shall designate the subjects which he desires to pursue. The student must satisfy the Dean of the Graduate School that the courses offered have been approved by his Adviser (the head of the department in which he takes his major), as well as by the heads of the other departments in which he has elected courses. The courses offered for the Master's degree shall represent not less than twenty-four credit hours of graduate instruction, at least twelve of which shall be in the major study. In case the candidate elects a major in the same department in which he completed a major in fulfillment of the requirements for a degree in the College of Liberal Arts, he shall, under the direction of his Adviser, elect sufficient work in some allied department to complete the twelve credit hours. The requirement of a thesis shall be optional with the Adviser. Whenever a thesis for the Master's degree is required, it must be filed with the Registrar not less than six weeks before the close of the final semester

of graduate study. Students taking work in courses open to graduates and undergraduates shall be required to complete an additional amount of work, estimated to be fifty per cent of the regular undergraduate requirements. Candidates for the degree of Master of Arts shall pass an oral examination before a committee of the faculty.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

For the Doctor's degree, three years of graduate study will ordinarily be required. Where the student's college training has been defective or he cannot devote his whole time to the work, the period of study will be longer than three years. At least the last year of study must be spent in residence at the University of Cincinnati. Students may be permitted to count for the Doctor's degree work done for the Master's degree, provided that such work is of a satisfactory character.

A candidate for the Doctor's degree shall designate at the time of his admission to the Graduate School three subjects which he desires to pursue. These shall be known as a major and two minor subjects, not more than two of which shall be selected in one department, and the candidate shall satisfy the Dean of the Graduate School that his selection has received the approval of the heads of the departments in which the courses have been selected. These heads of departments, together with the Dean of the Graduate School, shall constitute an Advisory Committee, under whose direction the candidate shall pursue his graduate course.

A candidate for the Doctor's degree is expected to be able to read French and German. In order to receive the degree of Doctor of Philosophy, the candidate must have completed satisfactorily such courses as shall be prescribed by his Advisory Committee, representing not less than forty-eight units of instruction, embodied in a major and two minor subjects, thirty units of which must be given to the major subject, and to pass such written examination on his major and minor subjects as the Advisory Committee may indicate. The statement of the number of units required for the Doctor's degree is to be taken as a minimum requirement. The degree is given, not as a result of the completion of a certain number of units of study, but on the basis of long study and scientific accomplishment.

The candidate shall furthermore be required to present, in such form as the Advisory Committee may determine, a thesis which will give evidence of high attainment and power of independent research, and he shall pass satisfactorily an oral examination before the faculty.

All theses offered for the Doctor's degree must be filed with the Registrar not later than six weeks before the close of the final semester

of graduate study. Moreover, each student upon whom the degree of Doctor of Philosophy is conferred, is required to deposit in the University Library one hundred printed copies of his thesis. The candidate may receive his diploma before the thesis is printed, provided a type-written copy is deposited with the Librarian and the sum of fifty dollars with the Registrar of the University. This sum will be returned upon presentation to the Library of the required number of printed copies of the thesis.

ADMISSION TO ADVANCED STANDING

Work done at other universities may be accepted as an equivalent for part of the work required for a graduate degree. All claims for such credit, together with all claims for advanced standing, must be filed with the Dean of the Graduate School within three weeks after the student enters upon his work at the University or resumes his work after a leave of absence for the purpose of carrying on work at another university.

At least twelve credits of the twenty-four required for the Master of Arts degree must be obtained through work done in residence at the University of Cincinnati.

SPECIAL ARRANGEMENT FOR GRADUATE STUDENTS IN LANE SEMINARY AND IN THE HEBREW UNION COLLEGE

With the approval of the Dean of the Graduate School and their Advisers, candidates may submit courses taken in Lane Seminary and in the collegiate department of the Hebrew Union College in partial fulfillment of the requirements for the Master of Arts degree. Not more than twelve units may be so counted.

The courses which may be so counted are as follows:

Lane Theological Seminary

3. Old Testament History.—Dr. Farr.
9. The Psalms.—*First semester.* Dr. Farr.
11. The Prophets.—*Second semester.* Dr. Farr.
7. Old Testament Thought.—*First semester.* Dr. Farr.
4. Messianic Prophecy.—*Second semester.* Dr. Farr.

Hebrew Union College

1. Biblical Literature.
2. Rabbinical Literature.
3. Jewish Philosophical Literature.

For detailed description of above courses, see catalogue of the Hebrew Union College.

FELLOWSHIPS AND SCHOLARSHIPS

There are at present three fellowships, a traveling scholarship, and ten University scholarships open to students of the Graduate School. The fellowships and traveling scholarship carry a stipend of from one hundred to five hundred dollars. The emolument of the University scholarships is sufficient for the payment of tuition fees. Applications should be addressed to the Dean of the Graduate School.

COURSES OF INSTRUCTION

For detailed description of the courses given in the Graduate School, see the Announcements of the College of Liberal Arts and the College for Teachers.

Courses in the Graduate School extend throughout the year, unless designated by "a" (first semester) or "b" (second semester).

ANATOMY

7. Those interested in post-graduate work in anatomy, histology, or gross human anatomy, are requested to apply to the head of the department.

Professor Knower, Associate Professor Malone.

ASTRONOMY

For Undergraduates and Graduates

3. Spherical and Practical Astronomy.—Once a week throughout the year. Professor Porter.

4. Celestial Mechanics.—Once a week throughout the year. Professor Porter.

For Further Description of Above Courses, See Page 75.

BACTERIOLOGY AND HYGIENE

4. Research.—Open to any qualified person after consultation with the head of the department. Professor Wherry.

BIBLICAL LITERATURE

11a. Poetry.—The dramatic, epic, and lyric poetry of the Hebrews.—T., Th., 11:30-12:30. Dr. Vance.

11b. Epistles.—Letter writing in the Greco-Roman world. The epistles of Paul and other apostles.—T., Th., 11:30-12:30. Dr. Vance.

BOTANY

To pursue advanced courses in botany the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

REQUIREMENTS FOR DEGREES

To enter upon work for the degree of Master of Arts in botany students must have completed Courses 1a, 2a, 3b, 4b, 5, 6a, 7a, 8b, 9b, or their equivalents. (See Botany, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. When botany is chosen as a minor for the degree of Doctor of Philosophy, the work required approximates that of the full course for the degree of Master of Arts in botany. The requirements for a higher degree, when botany is chosen as a major subject, are adequately stated under the general requirements for degrees (pages 25-26).

For Undergraduates and Graduates

6a. Plant Histology.—M., 1:00-2:00. Dr. Wilson.

7a. Plant Histology Laboratory.—M., 2:00-4:00; W., 1:00-4:00. Dr. Wilson.

8b. The Reproduction and Embryology of the Spermatophytes.—M., 1:00-2:00. Dr. Wilson.

9b. Reproduction of the Angiosperms.—M., 2:00-4:00; W., 1:00-4:00. Dr. Wilson.

10. Special Problems.—The work may be taken as a two or a three-hour course. Professor Benedict.

For Further Description of Above Courses, See Page 77.

Primarily for Graduates

20. Current Problems in Botany.—Lectures and discussions upon present problems in plant physiology. A reading knowledge of French or German is required. Two credit hours.
Professor Benedict.

Prerequisite: Courses 1a, 2a, 3b, 4b, 5, 6a, 7a, 8b, 9b.

21. Research.—Credit according to number of hours elected.
Professor Benedict.

CHEMISTRY

SPECIAL REQUIREMENTS FOR HIGHER DEGREES

The Degree of Doctor of Philosophy

A. Chemistry as the Major Subject.—All candidates who make chemistry their major subject must offer the following courses or their equivalents (see Chemistry, Liberal Arts): 1a, 2a, 3b, 4b, 5a,

6, 7, 8b, 9b, 12a, 13a. In addition to these requirements, students who specialize in a certain branch of chemistry must complete the advanced courses required in connection with the choice made. The completion of these courses, however, does not satisfy the requirements made of the candidate for a higher degree; he must show a maturity acquired by personal intimacy with the literature and method of chemistry.

B. Chemistry as the Minor Subject.—It is not possible to state precisely those courses which may be required in each particular case. The choice will be made after consultation with the heads of the departments in which the major work falls. The usual requirements will be Courses 1a, 2a, 3b, 4b, 5a, 6, 7. If the candidate has chosen one of the physical sciences as his major subject, Courses 12a and 13a (one semester) will be required; if one of the biological sciences has been made the major subject, Courses 8b and 9b will be taken.

The Master's Degree

A candidate for the Master's degree must present a thesis embodying the results of some experimental work, or a written account in some detail of a subject suggested by the instructor under whose direction the student has been placed.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—T., Th., 8:30-9:30. Associate Professor Fry.

11. Inorganic Preparations.—Hours to be arranged. Associate Professor Fry.

12a. Physical Chemistry.—M., W., F., 8:30-9:30. Dr. Davison.

13a. Physical Chemistry Laboratory.—M., T., 1:00-4:00. Dr. Davison.

32b. Electro-chemistry.—M., W., F., 8:30-9:30. Dr. Davison.

33b. Electro-chemistry Laboratory.—M., T., 1:00-4:00. Dr. Davison.

34a. Colloid Chemistry.—Three lectures per week. Dr. Davison.

[41a. Phase Rule.] Two exercises a week. Hours to be arranged. Dr. Davison.

Omitted in 1916-17.

20. Advanced Organic Chemistry.—M., W., F., 10:30-11:30. Professor Jones.

21. Advanced Organic Chemistry Laboratory.—Credit according to number of hours elected. Professor Jones.

24b. History of Chemistry.—Three exercises per week. Hours to be arranged. Associate Professor Fry.

28b. Elementary Spectrum Analysis (Qualitative).—Two laboratory periods per week. Hours to be arranged. Professor Jones.

For Further Description of Above Courses, See Page 81.

Primarily for Graduates

30. Research.—This course requires intensive laboratory work under the direction of some member of the department. Problems for investigation may be chosen from the following: organic chemistry (30a), inorganic chemistry (30b), physical chemistry (30c), or industrial chemistry (30d).

Professor Jones, Associate Professor Fry,
Associate Professor Goettsch, Assistant Professor Thum, Dr. Davison.

During the summer of 1916, students engaged in research may enroll in the Graduate School.

35b. Some Special Problems and Theories of Organic Chemistry.—A critical discussion of the working hypotheses and the theories of organic chemistry. With this end in view, their application to the difficulties of certain complex cases is presented in detail. Topics for consideration will be chosen each year from the following: Optical and geometrical isomerism of compounds of carbon, nitrogen, and other elements; tautomerism; the electronic conception of valence; bivalent carbon derivatives; oxonium compounds; purine derivatives; the carbohydrates; the alkaloids; the terpenes; the polypeptides, proteins; the organic dyes, etc. *Second semester.* Two hours a week, to be arranged. Professor Jones.

40. Journal Club Meetings.—Instructors and advanced students of the department present papers dealing with subjects under investigation in the department, or critical reviews of papers of general interest to those engaged in advanced work or research. All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

For Undergraduates and Graduates

15a. Railroads.—M., W., F., 10:30-11:30.
Assistant Professor Magee.

15b. Tariffs.—M., W., F., 10:30-11:30.
Assistant Professor Magee.

[16a. Labor.] M., W., F., 10:30-11:30.
Omitted in 1916-17. Assistant Professor Magee.

[16b. Money and Banking.] M., W., F., 10:30-11:30.
Omitted in 1916-17. Assistant Professor Magee.

FOR FURTHER DESCRIPTION OF ABOVE COURSES, SEE PAGE 83.

Primarily for Graduates

11. Elements of Economics.—An advanced course in the fundamental principles of economics. The work will consist mainly of a comparison of the views of representative economists. T., Th., 9:30-10:30. Professor Hicks.

EDUCATION

Education 3. Secondary Education.—Sec. I, S., 9:30-11:30. Professor West.

Education 3p. High School Assisting.—Sec. II, T. or Th., 4:00-6:00. Three credits. Professor West.

Education 5. Seminar in Secondary Education.—W., 4:00-6:00. Professor West.

Education 7. The Administration of Education.—W., 4:00-5:30. Professor Burris.

Education 8. The Criticism and Supervision of Instruction.—T., 4:00-5:00. Professor Hall.

Education 10. Experimental Pedagogy.—Th., 4:00-6:00. Assistant Professor Sechrist.

Education 12. Seminar.—T., 4:00-6:00. Assistant Professor Mead.

Education 112.—Seminar. S., 8:30-9:30. Assistant Professor Mead.

FOR FURTHER DESCRIPTION OF ABOVE COURSES, SEE PAGE 144.

ENGLISH
COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

For Upper-Classmen and Graduates

10. Chaucer.—T., Th., S., 9:30-10:30. Assistant Professor Stevens.

21. Bacon and Milton.—S., 9:30-11:30. Assistant Professor Young.

17. Studies in the Lyric.—T., Th., 11:30-12:30. Dr. Cummings.

14. English Drama from Its Origins to 1642.—T., Th., S., 9:30-10:30. Assistant Professor Stevens.

24. Recent European Drama.—T., Th., 1:00-2:00. Professor Chandler.

12. Literary Composition.—Th., 3:00-5:00. Assistant Professor McVea.

22. Foreign Backgrounds of English Literature.—T., Th., 2:00-3:00. Professor Chandler.

26a. The Essay.—M., W., 1:00-2:00. Assistant Professor Park.

11. The English Novel.—W., 4:00-6:00. Assistant Professor Stevens.

8a. Hamlet and Macbeth.—T., 4:00-6:00. Dr. Cummings.

For Further Description of Above Courses, See Page 88.

For Graduates Only

20. Seminary.—Studies in the Comic.—M., 4:00-6:00. Professor Chandler.

GEOLOGY AND GEOGRAPHY

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—Credit according to number of hours elected. Assistant Professor Carman.

*7. Mineralogy.—Two lectures and one laboratory. T., Th., 10:30-12:30; F., 10:30-11:30. Dr. Bucher.

8. Introductory Paleontology.—T., Th., 8:30-9:30; F., 2:00-5:00. Dr. Bucher.

12. Petrology.—Two or three hours, to be announced. ———.

13. Special Work in Geology.—Credit according to number of hours elected.

16. Advanced Physiography of the United States.—Lecture, W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

[20. Physiography of Europe.] Lecture, W., 4:00-6:00. Omitted in 1916-17. Dr. Bucher.

For Further Description of Above Courses, See Page 91.

GERMAN

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with Special Study of the Classic Periods of the Twelfth and Eighteenth Centuries.—M., W., F., 9-30:10:30. Professor Poll and Assistant.

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*Course 1 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making geology a major, unless Course 1 or its equivalent has been taken.

6. German Literature of the Nineteenth and Twentieth Centuries.—Th., 4:00-6:00. Professor Poll.

[10. German Composition (Advanced Course).] S., 9:30-11:30. Omitted in 1916-17. Professor Poll.

30. Glimpses of German Life and Culture. S., 9:30-11:30. Professor Poll.

For Further Description of Above Courses, See Page 91.

Primarily for Graduates

[12. Interpretation of both parts of Faust and Study of the Legend.] Collateral reading and written reports. T., 4:00-6:00. Professor Poll.

Course 12 is open to students who have passed in Course 5.

Omitted in 1916-17.

11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—Lectures in German and collateral reading. *Second semester*, T., 4:00-6:00. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

Of the three following courses, 7, 8, and 26, one is given each year. Students may express their preference, and upon sufficient demand, a second course will be given at hours to be arranged.

7. Middle High German.—Wright's *Middle High-German Primer*. Bachmann's *Mittelhochdeutsches Lesebuch*. Translation into modern German. W., 4:00-6:00. Associate Professor Lotspeich.

8. Gothic and Old High German, with special attention to the development into Modern German.—Braune's *Gotische Grammatik*; reading of selections from Ulfilas; lectures on Germanic philology. Wright's *Old High German Primer*, Braune's *Althochdeutsches Lesebuch*. Translation into modern German. W., 4:00-6:00. Associate Professor Lotspeich.

26. Old Norse. — Heusler's *Altislaendisches Elementarbuch*. Reading of selections from the Sagas. In the second semester selected poems of the Edda will be read. W., 4:00-6:00. Associate Professor Lotspeich.

[9b. German Seminary.] Willem's *Van den vos Reinaerde. Second semester*. T., 4:00-6:00. Professor Poll.

Omitted in 1916-17.

GREEK

For Undergraduates and Graduates

13. Greek Art.—T., 10:30-11:30. Professor Harry.

For Further Description of Above Course, See Page 97.

Primarily for Graduates

5. Rapid Reading.—Th., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 2:00-4:00. Professor Harry.

7. Greek Seminary.—Tragedy and Comedy (1916-17). M., 3:00-5:00. Professor Harry.

Open to graduates and to those who have completed the undergraduate courses in Greek.

HISTORY

For Undergraduates and Graduates

2. The Renaissance in Italy and Germany.—T., Th., 9:30-10:30. Professor Whitcomb.

25. European History since 1814.—T., Th., 10:30-11:30. Professor Whitcomb.

59. England since 1815.—T., Th., 11:30-12:30. Dr. McGrane.

[46. History of Germany.] T., Th., 10:30-11:30. Omitted in 1916-17. Professor Whitcomb.

16. American Diplomacy.—M., W., F., 8:30-9:30. Associate Professor Cox.

20. Spain and Spanish America.—T., Th., 1:00-2:00. Associate Professor Cox.

36. Materials and Methods in Secondary History.—One hour to be arranged. Associate Professor Cox.

39. Seminary in American History.—S., 10:30-12:30. Associate Professor Cox.

For Further Description of Above Courses, See Page 98.

Courses Given in the Lane Theological Seminary

Ancient and Medieval Church History.—Dr. Stephens.
Reformation History.—Dr. Stephens.
Modern Church History.—Dr. Stephens.
Apostolic History.—Dr. Stephens.

Students electing these courses are required to hand their names to Professor Whitcomb at the beginning of the semester.

LATIN

For Undergraduates and Graduates

4. Eclogues and Georgics of Virgil, *first semester*; selections from the silver Latin poets, *second semester*. Three hours, to be arranged. Professor Burnam.

Primarily for Graduates

(Hours in all cases to be arranged)

9. Latin and Romance Palaeography.—The history of the Latin alphabet in Western Europe, from A.D. 1 to the close of the fifteenth century. Students are given abundant practice in reading facsimiles. Three hours. Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a.	Cicero.	Three hours.
10b.	Virgil.	Omitted in 1916-17.
10c.	Caesar.	Omitted in 1916-17.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1916-17 (Course 10a) is Cicero. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

MATHEMATICS

For Undergraduates and Graduates

15. Theory of Equations, Including Determinants.—M., W., F., 9:30-10:30. Professor Hancock.

[8a. Advanced Integral Calculus.] M., W., F., 9:30-10:30. Omitted in 1916-17. Professor Hancock.

[9b. Differential Equations.] M., W., F., 9:30-10:30. Omitted in 1916-17. Professor Hancock.

For Further Description of Above Courses, See Page 102.

Primarily for Graduates

25. Elliptic Functions.—T., Th., 4:00-6:00. Professor Hancock.

27. Infinite Series and Integrals and Their Applications.—Hours to be arranged. Assistant Professor Moore.

MATHEMATICS (APPLIED)

Primarily for Graduates

26. History and Teaching of Mathematics.—W., 4:00-5:00; F., 4:00-6:00. Professor Slocum.

[11b. Fourier's Series and Spherical Harmonics.] Byerly, *Fourier's Series and Spherical Harmonics.* This course is intended as an introduction to mathematical physics. After a preliminary

study of certain trigonometric series, Fourier's theorem for the development of a function into a trigonometric series is derived, and the limitations of its validity investigated. This is followed by the study of Lagrange's, Laplace's, and Lamé's functions, with applications to problems in heat, electricity, potential, elasticity, etc. *Second semester*, Th., 4:00-6:00; S., 9:30-10:30.

Omitted in 1916-17. Professor Slocum.

[10a. Theory of Errors and Method of Least Squares.] Wright and Hayford, *Adjustment of Observations*. The general theory of the adjustments of observations, with applications to triangulation and the derivation of empirical formulas from experimental data. *First semester*, M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.

Omitted in 1916-17.

40. Seminary.—Theoretical and experimental research in some special topic of the mechanics of rigid, elastic, fluid, or gaseous bodies. Results to be summarized in a form suitable for publication. Credit according to number of hours elected. Hours by special arrangement. Professor Slocum.

For Other Courses in Mathematics See Page 102.

PATHOLOGY

8. Research.—Open to any qualified person after consultation with the head of the department. Professor Woolley.

PHILOSOPHY

For Undergraduates and Graduates

2b. Theory of Scientific Method.—M., W., F., 9:30-10:30. Professor Tawney.

3a. History of Philosophy from the Italian Renaissance to the Time of Kant.—M., W., F., 8:30-9:30. Professor Tawney.

3b. History of Modern Philosophy from the Time of Kant.—M., W., F., 8:30-9:30.

[4a. History of Philosophy to the Beginning of the Christian Era.] M., W., F., 8:30-9:30. ————.

Omitted in 1916-17.

[4b. History of the Philosophy of the Middle Ages.] M., W., F., 8:30-9:30.

Omitted in 1916-17.

5a. Ethics.—
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Assistant Professor Hartman.

5b. Ethical Interpretations—
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Assistant Professor Hartman.

8a. Aesthetics, the Theory of Art and the Beautiful.—T., Th., 9:30-10:30. Assistant Professor Hartman.

8b. Aesthetics, the Theory of Art and the Beautiful.—T., Th., 9:30-10:30. Assistant Professor Hartman.

12. Thought Movements of the Nineteenth Century.—S., 8:30-9:30. Professor Tawney.

For Further Description of Above Courses, See Page 103.

Primarily for Graduates

30. Contemporary Idealism.—Th., 1:00-3:00.
Assistant Professor Hartman.

31. The Method of Reflection.—T., 1:00-3:00.
Professor Tawney.

PHYSICS

For Undergraduates and Graduates

32b. Philosophy of Science.—T., Th., 11:30-12:30.
Professor More.

[3a. Theoretical Mechanics.] T., Th., S., 11:30-12:30.
Omitted in 1916-17. Professor More.

[18b. Theory of Electricity and Magnetism.] T., Th., S., 10:30-11:30. Professor More.
Omitted in 1916-17.

19a. Theory of Heat.—T., Th., S., 11:30-12:30.
Professor More.

15b. Theory of Light.—T., Th., S., 10:30-11:30.
Professor More.

8. Advanced Experimental Physics.—Credit according to number of hours elected.
Associate Professor Allen and Professor More.

10. Seminary.—T., 4:00-6:00. Professor More.

33a. Discharge of Electricity through Gases and Radioactivity.—Twice weekly, hours to be arranged. Associate Professor Allen.

For Further Description of Above Courses, See Page 107.

For Graduates Only

7. Lectures on Theoretical Physics.—This course is designed to include three years' work. In 1914-15 the lectures discussed heat; 1915-16, light; 1916-17, electricity. Twice weekly.
Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research.—Those electing this course are supplied with all the apparatus needed, and with the assistance of the Mechanician. Daily. Professor More and Associate Professor Allen.

PHYSIOLOGY

(The Joseph Eichberg Professorship)

7. Research.—Open to any qualified person after consultation with the head of the department. Professor Fischer.

22a. Bio-Chemistry.—*First semester*, M., W., F., 11:30-12:30.

22a. Bio-Chemistry Laboratory.—*First semester*, M., W., 8:30-11:30; F., 1:00-4:00. Assistant Professor Reemelin.
Prerequisite: Chemistry 8a and 9a.

POLITICAL AND SOCIAL SCIENCE

POLITICAL SCIENCE

For Undergraduates and Graduates

2a. International Law.—M., W., F., 8:30-9:30.
Professor Lowrie.

2b. European Governments.—M., W., F., 8:30-9:30.
Assistant Professor Gardner.

3a. Political Theory.—T., Th., 1:00-2:00.
Assistant Professor Gardner.

4b. Political Parties and Elections.—T., Th., 1:00-2:00.
Assistant Professor Gardner.

6. Public Finance and Taxation.—T., Th., 8:30-9:30.
Professor Lowrie.

11b. Municipal Functions.—M., W., F., 8:30-9:30.
Professor Lowrie.

16. American Diplomacy.—(See History 16) M., W., F., 8:30-9:30. Associate Professor Cox.

[17. Constitutional Law.] T., Th., 8:30-9:30.
Omitted in 1916-17. Assistant Professor Gardner.

[19b. Public Utilities.] T., Th., 8:30-9:30.
Omitted in 1916-17. Assistant Professor Gardner.

[32. Public Finance and Taxation.] T., 7:30-9:30.
Prerequisite: Economics 1. Professor Lowrie.
Omitted in 1916-17.

For Further Description of Above Courses, See Page 109.

Primarily for Graduates

25. Seminar in Municipal Government.—A study will be made of the functions of the modern city with special reference to Cincinnati. Given in coöperation with the Municipal Reference Bureau. M., 4:00-6:00. Professor Lowrie.

Open to those who have had Courses 11a and 11b, and to others by permission.

26. Research in Municipal Government.—Hours to be arranged. Professor Lowrie.

Open to those who have taken Courses 11a and 11b, and to others by permission.

SOCIAL SCIENCE

For Undergraduates and Graduates

7. Modern Social Theories.—M., W., 10:30-11:30. Assistant Professor Parker.

15. Modern Philanthropy.—M., W., 9:30-10:30. Assistant Professor Parker.

20. Criminals and Delinquents.—T., Th., 10:30-11:30. Assistant Professor Parker.

21. Social Problems.—M., W., 11:30-12:30. Assistant Professor Parker.

22. Seminary.—Credit according to number of hours elected. Assistant Professor Parker.

For Further Description of Above Courses, See Page 111.

PSYCHOLOGY

For Undergraduates and Graduates

2a. Experimental Psychology.—M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—M., W., F., 2:00-4:30.
Professor Breese and Mr. Isaacs.

9. Mental and Physical Tests.—Laboratory methods. Two credits per semester. T., 3:30-5:30. Professor Breese and Mr. Isaacs.

For Further Description of Above Courses, See Page 112.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Th., 3:00-5:00. Professor Breese.

20. Social Psychology.—A study of mental processes treated from the standpoint of their social background with special reference to problems of the school. S., 9:30-11:30. Dr. Talbert.

ROMANCE LANGUAGES

FRENCH

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—T., Th., 9:30-10:30. Professor Ogden.

5. French Drama in the Nineteenth Century.—W., 1:00-2:00; F., 2:00-3:00. Mr. ———.

10. Old French Readings.—Two credits. Hours to be arranged. Mr. ———.

24. The Prose Writers of the Nineteenth Century.—T., 4:00-6:00. Professor Ogden.

26. The French Novel in the Nineteenth Century.—T., Th., 8:30-9:30. Professor Ogden.

SPANISH

For Undergraduates and Graduates

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Th., 3:00-5:00. Assistant Professor Bassett.

[22. The Picaroon Novel.] Th., 3:00-5:00.
Omitted in 1916-17. Assistant Professor Bassett.

ITALIAN

For Undergraduates and Graduates

16. Italian Prose in the Nineteenth Century.—Two hours, to be arranged. Mr. ———.

For Further Description of Above Courses, See Pages 114, 116.

ZOOLOGY

To pursue advanced courses in zoology, the student should have some training in physics and chemistry, and should be able to read French and German. Special facilities are afforded students pursuing courses of research.

Requirements for Degrees

To enter upon work for the degree of Master of Arts in zoology, students must have completed Courses 1, 2, 15a, 17b, 18b, 19b, 13a, 14a, 20b, or their equivalents. (See Zoology, College of Liberal Arts.) Courses for "Undergraduates and Graduates" may be counted as graduate subjects toward the degree of Master of Arts by students who have elected majors in other departments. The requirements for a higher degree, when zoology is chosen as a major subject, are adequately stated under the general requirements for degrees (pages 25-26).

For Undergraduates and Graduates

15a. Invertebrate Morphology.—M., W., 1:00-2:00. Miss Box.

[16a. Invertebrate Morphology, Laboratory.] M., W., 2:00-5:00. Omitted in 1916-17. Miss Box.

[17b. Comparative Anatomy of Vertebrates.] T., Th., 1:00-2:00. Omitted in 1916-17. Mr. Stephenson.

[18b. Comparative Anatomy of Vertebrates, Laboratory.] T., Th., 2:00-5:00. Mr. Stephenson.
Omitted in 1916-17.

10a. Microscopical Technique.—M., W., 1:00-4:00; F., 2:00-5:00. Associate Professor Wieman.

10b. Cytology.—M., W., 1:00-4:00; F., 2:00-5:00.
Associate Professor Wieman.

For Further Description of Above Courses, See Page 118.

Primarily for Graduates

31. Research. Hours to be arranged.
Associate Professor Wieman.

McMICKEN COLLEGE OF LIBERAL ARTS

FACULTY AND INSTRUCTORS

CHARLES WILLIAM DABNEY, Ph.D., LL.D., President of the University
JERMAIN GILDERSLEEVE PORTER, Ph.D., Director of the Observatory and Professor of Astronomy
FREDERICK CHARLES HICKS, Ph.D., Sinton Professor of Economics and Commerce and Supervisor of the Evening Academic Courses
HARRIS HANCOCK, Ph.D., D.Sc., ... Professor of Mathematics
JOHN MILLER BURNAM, Ph.D., ... Professor of Latin
MAX POLL, Ph.D., ... Professor of the Germanic Languages
JOSEPH EDWARD HARRY, Ph.D., ... Professor of Greek
MERRICK WHITCOMB, Ph.D., ... Professor of History
LOUIS TRENCHARD MORE, Ph.D., ... Professor of Physics
BURTIS BURR BREESE, Ph.D., ... Professor of Psychology
STEPHEN ELMER SLOCUM, B.E., Ph.D., ... Professor of Applied Mathematics
NEVIN M. FENNEMAN, Ph.D., Professor of Geology and Geography
LAUDER WILLIAM JONES, Ph.D., ... Professor of Chemistry
GUY ALLAN TAWNEY, Ph.D., ... Professor of Philosophy
FRANK WADLEIGH CHANDLER, Ph.D., ... Professor of English, Ropes Professor of Comparative Literature, and Dean of the College of Liberal Arts
PHILLIP OGDEN, Ph.D., ... Professor of Romance Languages
HARRIS MILLER BENEDICT, Ph.D., ... Professor of Botany
SELDEN GALE LOWRIE, Ph.D., ... Professor of Political Science
—— —— ..... Professor of Zoology
HARRY SHIPLEY FRY, Ph.D., ... Associate Professor of Chemistry
SAMUEL JAMES MCINTOSH ALLEN, Ph.D., Associate Professor of Physics
ISAAC JOSLIN COX, Ph.D., ... Associate Professor of History
CLAUDE M. LOTSPEICH, Ph.D., ... Associate Professor of German
HARRY LEWIS WIEMAN, Ph.D., ... Associate Professor of Zoology
HENRY MAX GOETTSCH, Ph.D., Associate Professor of Industrial Chemistry
EMILIE WATTS MCVEA, A.M., Assistant Professor of English and Dean of Women
CHARLES NAPOLEON MOORE, Ph.D., ... Assistant Professor of Mathematics

BENJAMIN CARLTON VAN WYE, A.M., Assistant Professor of Public Speaking and English
WILLIAM TUNSTALL SEMPLE, Ph.D., Assistant Professor of Latin
J. ERNEST CARMAN, Ph.D., ... Assistant Professor of Geology
RALPH EMERSON BASSETT, A.M., Assistant Professor of Romance Languages
BERTHA K. YOUNG, A.M., ... Assistant Professor of English
CLYDE WILLIAM PARK, A.M., ... Assistant Professor of English
WILLIAM HAMMOND PARKER, Ph.D., Assistant Professor of Economics and Social Science
HENRY G. HARTMAN, Ph.D., ... Assistant Professor of Philosophy
CLARENCE ORAN GARDNER, Ph.D., Assistant Professor of Political Science
CLARENCE D. STEVENS, A.M., ... Assistant Professor of English
ERNEST EDGAR THUM, E.M., ... Assistant Professor of Metallurgy
JAMES DYSART MAGEE, Ph.D., .. Assistant Professor of Economics
SELBY FRAME VANCE, A.M., D.D., .. Lecturer on Biblical Literature
ALFRED BRODBECK ..... Director of Physical Education
FLORENCE CAMERON LAWLER, B.S., ... Instructor in Mathematics
ARTHUR JAMES KINSELLA, A.M., ... Instructor in Greek
JOSEPH HENRY KINDLE, A.M., ... Instructor in Mathematics
PLATT BISHOP EVENS, Mechanician and Instructor in Laboratory Arts
CORA MAY BOX, A.M., ... Instructor in Zoology
ELEANOR KATHERINE NIPPERT, A.B., ... Instructor in German
MARTIN LUDWICH, A.M., ... Instructor in German
ROBERT E. CLYDE GOWDY, Ph.D., ... Instructor in Physics
THOMAS LANSING PORTER, Ph.D., ... Instructor in Physics
EDWIN W. ESSLINGER, A.M., .. Instructor in Analytical Chemistry
WALTER H. BUCHER, Ph.D., ... Instructor in Geology
ERNEST LYNN TALBERT, Ph.D., Instructor in Psychology and Director of Admissions
WILLARD A. KINNE, A.B., ... Instructor in French and Spanish
ALBERT WATSON DAVISON, Ph.D., Instructor in Physical Chemistry
EDITH J. GREBNER ..... Instructor in Physical Education
SCHACHNE ISAACS, A.M., ... Instructor in Psychology
ORVILLE TURNER WILSON, Ph.D., ... Instructor in Botany
REGINALD CHARLES MCGRANE, Ph.D., ... Instructor in History
HUBERTIS MAURICE CUMMINGS, Ph.D., ... Instructor in English
JOSEPH CLARK STEPHENSON, B.S., ... Instructor in Zoology
EDWARD SMITH, M.S., ... Instructor in Mathematics
M. CANNON SNEED, A.M., ... Instructor in Chemistry
ALAN T. WATERMAN, A.M., ... Instructor in Physics
——— ———, ... Instructor in Metallurgy
——— ———, ... Instructor in English
——— ———, ... Instructor in French and Italian

ANNETTE FRANCES BRAUN, Ph.D., ... Assistant in Zoology
LEONORA NEUFFER, A.M., ... Assistant in Chemistry
HELEN STANLEY, A.M., ... Assistant in English
MADELAINE MAURY WRIGHT, A.B., ... Assistant in English
MARY MALLON, A.B., ... Assistant in Economics
W. GERALD BARNES, A.B., ... Assistant in Physical Education
MIRIAM URBANSKY, A.B., ... Assistant in History
E. LUCY BRAUN, Ph.D., ... Assistant in Botany
MARTHA JANE GIBSON, A.M., ... Assistant in English
AGNES E. VAN SLYCK, A.M., ... Assistant in English
NEWTON B. GREEN, A.B., ... Assistant in Botany
DULCE BRUTTON, A.B., ... Assistant in History

REQUIREMENTS FOR ADMISSION TO THE McMICKEN COLLEGE OF LIBERAL ARTS

Candidates for admission as undergraduates must be at least sixteen years of age. A student must offer, for unconditional admission, sixteen units. These units may be secured by entrance examination or by certificate from an accredited secondary school from which the student has graduated with a grade in each academic subject of at least seventy per cent.

DEFINITION OF A UNIT

A unit represents a full year's study of a subject. The recitation time devoted to each unit—subject should be equal to 120 sixty-minute periods. In reckoning units, a double allowance of time should be given to laboratory, drawing room, field, or shop work. Ordinarily, in order to fulfill this requirement, a study must be pursued for five periods per week throughout an academic year; but in schools where the school year is long, for example, 40 weeks, and the recitation periods are not less than 45 minutes in length, four periods per week for a year may fulfill the time requirement for a unit. The sixteen units must be made up in subjects, selected according to directions, from those named below; and candidates must complete the assignment of work specified for each subject in the section headed "Definition of Units." Of these sixteen units every candidate for admission to the McMicken College of Liberal Arts must present the following:

ENGLISH—Three units, in which there can be no "condition."

MATHEMATICS—One unit in algebra and one unit in plane geometry.

HISTORY—One unit.

LANGUAGE—Three units, from the five languages: Latin, Greek. French, German, Spanish; two units must be in the same language,

Candidates who intend to pursue the study of Latin in the University must present four units in Latin.

In addition to these fixed requirements the candidate must offer a number of units selected from the list of subjects below, sufficient, with the units specified above, to amount to a total of sixteen. The number of units that may be offered in any subject is shown in the following table:

	Number of Units Accepted for Admission		
	Minimum		Maximum
English	3 required		4
Latin	1	Three units required, two of which must be in one language	or 2 or 3 or 4
Greek	1		or.....2 or 3
French	1		or 2 or 3 or 4
German	1		or 2 or 3 or 4
Spanish	1		2
General or Medieval and Modern History	1	One unit required	1
Ancient	½		1
English	½		1
American	½		1
American and Civics	1		1
Economics	½		½
Algebra	1 required		or..1½ or 2
Geometry, Plane	1 required		1
Geometry, Solid	½		½
Trigonometry	½		1
Civics	½		½
Physics	1		1
Chemistry	1		1
*Zoology	1		1
*Botany	1		1
Physical Geography	½		1
Astronomy	½		½
Bookkeeping	1		2
Stenography-Typewriting	1		1
Commercial Geography	½		½
Commercial Law	½		½
Drawing	1		1
Manual Training	1		or 2 or 3 or 4
Household Arts	1		or 2 or 3 or 4

*One-half unit will be allowed in zoology and one-half unit in botany when these two subjects are presented together as one unit in the same year.

ENTRANCE CONDITIONS

Until September, 1917, students who are deficient in not more than two units of the sixteen required for admission, provided their credit includes three units of English, may be admitted conditionally to the College of Liberal Arts. All such entrance conditions must be removed before the student is allowed to register as a regular student for a second year of residence at the University. Beginning with September, 1917, a student may not enter with more than one condition.

ADMISSION BY EXAMINATION

Examinations for admission will be held on June 12, 13, 14, 15, 16, 17, and on September 14, 15, 16, 18, 19, 20, 1916. In 1917 they will be held on January 15, 16, 17, 18, 19, 20, and on June 18, 19, 20, 21, 22, 23.

Students who desire to take these examinations must obtain permission beforehand from the Director of Admissions. All applications for permission to take the entrance examinations should be made at least two days before the first day of the examination period. Some of the examinations may be taken in the spring and the remainder in the fall if so desired. Students who apply for entrance examinations at times other than the days specified will be charged a fee of five dollars. Extra examinations, however, will not be furnished except for good and sufficient reasons.

Examinations for candidates without graduation certificates.—A candidate for admission to the University, coming from one of the accredited schools, who is not a graduate of such school, will not be admitted to the entrance examinations within one year after leaving such preparatory school, unless recommended for examination by the principal of the school from which he comes.

Students intending to take the entrance examinations should consult the statement of the entrance requirements, as printed on a preceding page, and arrange to take their examinations

(a) in the fixed requirements, and

(b) in enough additional subjects to make a total of sixteen units.

The work covered by each unit or group of units in the various subjects may be found on the following pages. Specimen entrance examination questions will be furnished free of charge on application to the Director of Admissions.

SCHEDULE OF ENTRANCE EXAMINATIONS

June 12 and September 14, 1916; January 15 and June 18, 1917:

8:30-11:00	English	First 3 units
11:00-12:00	English	Fourth unit
1:00- 3:00	Physics	1 unit
3:00- 4:00	Solid Geometry	½ unit
4:00- 5:00	Physical Geography	½ or 1 unit

June 13 and September 15, 1916; January 16 and June 19, 1917:

8:30-10:30	Latin	First and second units
10:30-12:00	Latin	Third and fourth units
1:00- 3:00	Chemistry	1 unit
3:00- 4:00	Astronomy	½ unit
4:00- 5:00	Civics	½ unit

June 14 and September 16, 1916; January 17 and June 20, 1917:

8:30-10:30	French	1 and 2 units
10:30-12:00	French	3 and 4 units
1:00- 2:30	Plane Geometry	1 unit
2:30- 4:00	Algebra	First unit
4:00- 5:00	Advanced Algebra	½ or 1 unit additional

June 15 and September 18, 1916; January 18 and June 21, 1917:

8:30- 9:30	Ancient History	½ or 1 unit
9:30-10:30	American History	½ or 1 unit
10:30-12:00	General or Medieval and Modern History	1 unit
1:00- 2:00	English History	½ or 1 unit
2:00- 3:00	American History and Civics	1 unit
3:00- 5:00	Spanish	1 and 2 units

June 16 and September 19, 1916; January 19 and June 22, 1917:

8:30-10:30	German	1 and 2 units
10:30-12:00	German	3 and 4 units
1:00- 3:00	Zoology	½ or 1 unit
3:00- 5:00	Botany	½ or 1 unit

June 17 and September 20, 1916; January 20 and June 23, 1917:

8:30-10:30	Greek	First and second units
	Bookkeeping	1 or 2 units
10:30-11:30	Greek	Third unit
	Stenography-Typewriting	1 unit
11:30-12:00	Economics	½ unit
1:00- 2:00	Trigonometry	½ or 1 unit
	Commercial Geography	½ unit
	Commercial Law	½ unit
4:00- 5:00	Manual Training	1 to 4 units
	Drawing	1 unit
	Household Arts	1 to 4 units

ADMISSION ON CERTIFICATE FROM ACCREDITED SCHOOLS

Work of satisfactory grade (not lower than 70 per cent) will be accepted from graduates of the University's accredited schools in lieu of the entrance examinations upon the presentation of the proper certificate, signed by the principal of the school, certifying to the work of the candidate. All certificates presented for admission must specify the work actually done, the time devoted to each subject, and the grade received in each course. Blank forms will be furnished upon application to the Director of Admissions.

These certificates, properly made out, should be sent to the Director of Admissions, University of Cincinnati, Cincinnati, Ohio, as soon as possible after graduation, and at least five days before the first day of registration. Upon receipt of the certificate, the Director of Admissions will pass upon the application, and if it is satisfactory, will send a card of admission, which must be presented to the Registrar at the opening of the session. If the certificate is not satisfactory, the candidate will be informed, so that he may prepare himself for the entrance examinations.

A candidate from an accredited school who is not a graduate of such school will not be admitted upon certificate at all, but must enter by examination in accordance with the rule given above under the heading "Admission by Examination."

*LIST OF ACCREDITED SCHOOLS

The following preparatory schools and high schools are on the accredited list of the University of Cincinnati. This list is subject to change from year to year, and each school is visited from time to time by a representative of the University:

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*Superintendents or principals who may desire to have their schools accredited by the University, should address the Director of School Affiliation.

CITY	NAME OF SCHOOL	PRINCIPAL
Bellevue, Ky.	High School	*J. W. Ireland
Cincinnati, O.	Oakhurst Collegiate School	Miss H. F. Kendrick
Cincinnati, O.	The Bartholomew Clifton School	Misses E. A. Ely and Mary F. Smith
Cincinnati, O.	Franklin School	J. E. White G. S. Sykes
Cincinnati, O.	The College Preparatory School for Girls	Mary Doherty
Cincinnati, O.	Hughes High School	E. D. Lyon
Cincinnati, O.	Walnut Hills High School	§§A. T. Henshaw
Cincinnati, O.	Woodward High School	Pliny A. Johnston
Cincinnati, O.	University School	Wm. E. Stilwell
Cincinnati, O.	Ohio Military Institute	*A. M. Henshaw S. P. C. Roberts ‡C. B. Wood
Cincinnati, O.	Hartwell High School	Arthur Powell
Cincinnati, O.	Madisonville High School	C. M. Merry
Cincinnati, O.	Pleasant Ridge High School	T. L. Simmermon
Covington, Ky.	High School	*H. O. Sluss H. S. Cox
Danville, Ky.	Kentucky College for Women	§D. D. Allen
Dayton, O.	Steele High School	*E. J. Brown J. H. Painter
Delhi, O.	Mt. St. Joseph on the Ohio Academy	Sister Mary Beatrice
Glendale, O.	High School	*J. C. Chapin
Glendale, O.	Glendale College	§Jane R. DeVoe
Hamilton, O.	High School	*Darrel Joyce C. H. Lake
Jeffersonville, Ind.	High School	*C. M. Marble Emmett Taylor
Lawrenceburg, Ind.	High School	*J. W. Riddle Lydia A. Sembach
Lebanon, O.	High School	*C. H. Young C. H. Bruner
Lockland, O.	High School	*C. F. Sharp
Ludlow, Ky.	High School	*W. D. Reynolds C. O. Morgan
Maysville, Ky.	High School	*W. J. Caplinger G. C. Mance
Middletown, O.	High School	*N. D. O. Wilson Elsor Heater
Milford, O.	High School	*D. B. Clark Chas. H. Schafer
Newport, Ky.	High School	*W. P. King R. F. Gaither
Norwood, O.	High School	*W. S. Cadman W. W. McIntire
Oldenburg, Ind.	Academy of the Immaculate Conception	Sister M. Veronica
St. Bernard, O.	High School	J. L. Trisler
Wyoming, O.	High School	*C. S. Fay Evelyn M. Prichard

*Superintendent ‡Commandant §President §§Acting Principal

LIST OF RECOGNIZED SCHOOLS

The work of the following schools is recognized by the University. Graduates of these schools will be given entrance credit without examination for such work as they have completed in a satisfactory manner:

CITY	NAME OF SCHOOL	PRINCIPAL
Cincinnati, O.	East Night High School	Albert Schwartz
Cincinnati, O.	West Night High School	E. D. Lyon
Cincinnati, O.	St. Mary's, Hyde Park, High School,	Rev. P. J. Hynes
Dayton, Ky.	High School.....	J. M. McVey L. N. Taylor, Supt.
Highlands, Ky.	High School.....	C. R. Rounds, Supt.
Loveland, O.	High School.....	John Morris, Supt.
Terrace Park, O.	High School.....	E. H. Foster
Williamsburg, O.	High School.....	R. C. Franz

ACCREDITED SCHOOLS OF THE NORTH CENTRAL ASSOCIATION

Graduates of the secondary schools approved by the North Central Association of Colleges and Secondary Schools will be admitted to the University of Cincinnati in accordance with the provision for "Admission on certificate from accredited schools."

DESCRIPTION OF SUBJECTS ACCEPTED FOR ADMISSION

ENGLISH COMPOSITION AND LITERATURE

The examination in English will consist of two parts, one relating to composition and the other relating primarily to literature.

(a) The candidate should possess such knowledge of English grammar and of the principles of rhetoric, including the construction of the paragraph and of the sentence, as will enable him to write simply and correctly on some subject familiar to him.

(b) The candidate will be required to show his acquaintance with good literature and his knowledge of literary values. The books adopted by the National Conference on Uniform Entrance Requirements, as given below, are recommended in preparation for this part of the examination; but any course of equivalent amount and value will be received. The examination is intended to test rather the candidate's power to judge literary values so that he may

read with intelligence and appreciation, than his knowledge of specific books.

I. THREE UNITS.—The preparation should include the following subjects:

Composition.—There should be pratice in writing at regular and frequent intervals throughout all the years of the preparatory course. Special attention should be given to the proper structure of sentences and paragraphs, and the method of planning or outlining an essay.

Grammar.—It is expected that the applicant will be familiar with the essentials of English grammar, and will be able to explain the construction of sentences that occur in the classics he has read.

English Classics.—The following books are recommended for reading and study:

a. For Reading, 1915 to 1919

I. (Two to be selected): The *Old Testament*, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII; the *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI; Virgil's *Aeneid*. The *Odyssey*, *Iliad*, and *Aeneid* should be read in English translations of recognized literary excellence.

For any unit of this group a unit from any other group may be substituted.

II. (Two to be selected): Shakespeare's *Merchant of Venice*; *Midsummer Night's Dream*; *As You Like It*; *Twelfth Night*; *The Tempest*; *Romeo and Juliet*; *King John*; *Richard III*; *Henry the Fifth*; *Coriolanus*; and *Julius Caesar*, *Macbeth*, and *Hamlet*, if these have not been chosen in the group for intensive study.

III. (Two to be selected): *Prose Fiction.*—Malory's *Morte d'Arthur* (about 100 pages); Bunyan's *Pilgrim's Progress*, Part I; Swift's *Gulliver's Travels* (voyages to Lilliput and to Brobdingnag); DeFoe's *Robinson Crusoe*, Part I; Goldsmith's *Vicar of Wakefield*; Frances Burney's *Evelina*; Scott's Novels (any one); Jane Austen's Novels (any one); Maria Edgeworth's *Castle Rackrent*, or *The Absentee*; Dickens' Novels (any one); Thackeray's Novels (any one); George Eliot's Novels (any one); Mrs. Gaskell's *Cranford*; Kingsley's *Westward Ho!* or *Hereward, the Wake*; Reade's *The Cloister and the Hearth*; Blackmore's *Lorna Doone*; Hughes' *Tom Brown's Schooldays*; Stevenson's *Treasure Island*, or *Kidnapped*, or *Master of Ballantrae*; Cooper's Novels (any one); Poe's Selected Tales; Hawthorne's *The House of the Seven Gables*, or *Twice-Told Tales*, or *Mosses from an Old Manse*; a collection of Short Stories by various standard writers.

IV. (Two to be selected): *Essays, Biography, etc.*—Addison and Steele's *The Sir Roger de Coverley Papers,* or Selections from the *Tatler* and *Spectator* (about 200 pages); Boswell's *Selections from the Life of Johnson* (about 200 pages); Franklin's *Autobiography*; Irving's *Sketch Book* (about 200 pages), or *Life of Goldsmith*; Southey's *Life of Nelson*; Lamb's *Essays of Elia* (about 100 pages); Lockhart's *Life of Scott* (about 200 pages); Thackeray's Lectures on Swift, Addison, and Steele in the English Humourists; Macaulay's *Lord Clive, Warren Hastings, Milton, Addison, Goldsmith, Frederic the Great, Madame d'Arblay* (any one); Trevelyan's *Life of Macaulay* (about 200 pages); Ruskin's *Sesame and Lilies,* or Selections (about 150 pages); Dana's *Two Years before the Mast*; Selections from Lincoln, including at least the two *Inaugurals,* the *Speeches in Independence Hall and at Gettysburg,* the *Last Public Address,* and the *Letter to Horace Greeley,* together with a brief memoir or estimate; Parkman's *The Oregon Trail*; Thoreau's *Walden*; Lowell's *Selected Essays* (about 150 pages); Holmes's *The Autocrat of the Breakfast Table;* Stevenson's *An Inland Voyage,* and *Travels with a Donkey*; Huxley's *Autobiography,* and selections from Lay Sermons, including the addresses on *Improving Natural Knowledge, A Liberal Education,* and *A Piece of Chalk*; a collection of Essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers; a collection of Letters by various standard writers.

V. (Two to be selected): *Poetry.*—Palgrave's *Golden Treasury* (First Series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns; Palgrave's *Golden Treasury* (First Series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study under *b*); Goldsmith's *The Traveller,* and *The Deserted Village*; Pope's *The Rape of the Lock*; a collection of English and Scottish Ballads, as, for example, some Robin Hood ballads, *The Battle of Otterburn, King Estmere, Young Beichan, Bewick and Grahame, Sir Patrick Spens,* and a selection from later ballads; Coleridge's *The Ancient Mariner, Christabel,* and *Kubla Khan*; Byron's *Childe Harold,* Canto III or IV, and *The Prisoner of Chillon*; Scott's *The Lady of the Lake,* or *Marmion*; Macaulay's *The Lays of Ancient Rome, The Battle of Naseby, The Armada, Ivry*; Tennyson's *The Princess,* or *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur*; Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa-Down in the City, The Italian in England, The Patriot, The Pied Piper, "De Gustibus—", Instans Tyrannus*; Arnold's *Sohrab and Rustum,* and *The Forsaken Merman*; Selections from American Poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

b. For Intensive Study, 1915 to 1919

This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

I. Drama.—Shakespeare's *Julius Caesar, Macbeth, Hamlet.*

II. Poetry.—Milton's *L'Allegro, Il Penseroso,* and either *Comus* or *Lycidas*; Tennyson's *The Coming of Arthur, The Holy Grail,* and *The Passing of Arthur*; the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's *Golden Treasury* (First Series).

III. Oratory.—Burke's *Speech on Conciliation with America*; Macaulay's *Two Speeches on Copyright,* and Lincoln's *Speech at Cooper Union*; Washington's *Farewell Address,* and Webster's *First Bunker Hill Oration.*

IV. Essays.—Carlyle's *Essay on Burns,* with a selection from Burn's Poems; Macaulay's *Life of Johnson*; Emerson's *Essay on Manners.*

II. Fourth Unit.—For the fourth unit in English composition and literature, the preparation should include, during the applicant's fourth year of the high school course, a study of the outlines of English literary history, based upon one of the recent manuals of English literature, and accompanied by a considerable amount of reading of representative authors.

LATIN

I. First Unit.—The student should have digested some Beginner's Book like that of Coy, or Collar and Daniel.

II. Second Unit.—Caesar's *Gallic War,* Books I-IV, or an equivalent amount selected from the remaining portions of that work. It is expected that in the first year's preparation the student has mastered the declensions, comparisons, and verbal inflections, knows the leading rules of syntax, and possesses some vocabulary. Along with Caesar there should be some exercise in Latin Composition, a wider and deeper acquaintance with grammatical principles of the language, and a good vocabulary. Sallust's *Catiline* or an equivalent amount of the *Jugurtha* may be substituted for two books of Caesar. It is furthermore suggested that the teacher, if possible, vary the Caesar lessons by selections from Books V-VII. The Department of Latin is also willing to accept Miller and Beeson's second year Latin Book as a substitute for Caesar.

III. Third Unit.—Cicero, *In Catilinam,* I-IV, and *Pro Archia,* with more practice in composition. It is also preferred that the

student should study an additional oration or short treatise, e. g., *de Amicitia*, or selections from the *Letters*. He should also begin the practice of writing continuous prose.

IV. Fourth Unit.—Vergil's *Aeneid*, I-VI, with scanning and prosody. An equivalent amount of verse from *Aeneid*, VII-XII, or Ovid will be accepted in place of *Aeneid*, III and V. If circumstances permit, it is very advantageous to let Ovid precede Vergil. It is preferable that the composition done during this year be based on Cicero.

GREEK

I. First Unit.—White's *Beginner's Book* or an equivalent Grammar and composition work.

II. Second Unit.—Xenophon's *Anabasis*, Books I and II. Grammar and composition work.

III. Third Unit.—In addition to the work outlined in paragraphs I and II, the following:

Xenophon, *Anabasis*, Books III and IV.
Homer, *Iliad*, Books I-III.
Composition.
Grammar: Babbitt, Goodell, Goodwin, Hadley-Allen, or Smyth.

FRENCH

I. One Unit.—

(a) The translation at sight of very simple French prose.

(b) The translation into French of easy sentences to test the candidate's familiarity with elementary grammar.

(c) One full year of five periods a week is necessary to meet the requirements in one unit. The first one hundred and fifty pages in Fraser and Squair's *French Grammar* may be taken as a standard of the amount of grammar which should be covered during the period.

II. Two Units.—

(a) The translation at sight of ordinary prose. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of elementary grammar; the regular verbs; the auxiliaries être, avoir; the more frequent irregular verbs.

(c) The translation into French of sentences to test the candidate's familiarity with elementary grammar.

Two full years of five periods a week are necessary to meet the requirements in two units. Fraser and Squair's *French Grammar*, complete, may be taken as a standard of the amount of grammar

which should be covered during that period. Not less than three hundred duodecimo pages should be read from the works of at least three different authors. Suitable texts for these two units are: *Le Siège de Berlin* and *La Dernière Classe*, Daudet; *La Mère Sauvage*, Maupassant; *Le Tour de la France*, Bruno; *Le Petit Chose*, Daudet; *Sans Famille*, Malot; *La Tache du Petit Pierre*, Mairet; *La Poudre aux Yeux*, Labiche et Martin; *Le Voyage de M. Perrichon*, Labiche et Martin; *La Cigale chez les Fourmis*, Legouvé et Labiche.

III. Three Units.—A continuation for one year of work just outlined. The candidate should be able to read at sight ordinary French prose or poetry, to translate into French easy English prose, to answer questions involving a more thorough knowledge of the essentials of French syntax, especially the ordinary uses of tenses and modes. It is expected that the candidate for three units will have worked through a grammar and will have read five or six hundred pages of French during three years of five periods a week. Suitable texts for these three units are: The plays of Labiche, Scribe, etc.; *Gil Blas*, Lesage; *Le Tour de la France*, Bruno; *La Belle Nivernaise*, Daudet; *Les Fourberies de Scapin*, *Le Médicin Malgré Lui*, Molière; Voltaire's historical writings; *Le Cid*, Corneille; Coppée's poems, etc.

IV. Four Units.—

(a) The translation at sight of standard French. The passages set for translation must be rendered into clear and idiomatic English.

(b) A test of the candidate's knowledge of the irregular verbs and the essentials of French syntax, especially the uses of tenses, modes, prepositions, and conjunctions.

(c) The translation into French of a connected passage of English prose.

(d) The writing of a theme in French on a given topic.

Four full years in a good preparatory school are necessary to meet the requirements for four units. Not less than six hundred pages should be read from the works of at least five different authors. Suitable texts besides those given above are *Colomba*, Mérimée; *La Mare au Diable*, Sand; *Pêcheur d' Islande*, Loti; *La Canne de Jonc*, Vigny; *Horace*, Corneille; *L' Avare* and *Le Bourgeois Gentilhomme*, Molière; *Athalie*, Racine; *Le Gendre de M. Poirier*, Sandeau; selections from Victor Hugo; *Le Monde où l'on s'ennuie*, Pailleron.

The student should have constant practice in giving paraphrases and abstracts. He should be trained to write French from dictation an order to enable him to understand lectures delivered in that language.

GERMAN

I. One Unit.—

(a) The translation at sight of very simple German prose.

(b) The translation into German of easy sentences, to test the candidate's familiarity with elementary grammar.

The candidate ought to have read not less than one hundred pages of easy German, such as is found in Hewitt's or Harris' *German Reader*.

II. Two Units.—

(a) The translation at sight of simple German prose.

(b) The translation into German of easy connected prose, to test the candidate's familiarity with elementary grammar. The requirement in elementary grammar includes the conjugation of the weak and strong verbs; the declination of articles, adjectives, pronouns, and such nouns as are readily classified; the prepositions; the simpler uses of the modal auxiliaries; the elements of syntax, especially the rules governing the order of words.

The candidate ought to have read not less than two hundred pages of easy German, such as is found in Hewett's or Harris' *German Reader*.

In general, to obtain two units in German, two years' work in a good preparatory school is required.

III. Three Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate ought to have read not less than four hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Wilhelm Tell*; Lessing's *Minna von Barnhelm*; Goethe's *Hermann und Dorothea*; Wildenbruch's *Das edle Blut*; Fontane's *Vor dem Sturm*; Moser's *Kopnickerstrasse*.

Generally speaking, three years' work in a good preparatory school will be necessary in order to meet the requirements for three units.

IV. Four Units.—

(a) The translation at sight of ordinary German.

(b) The translation into German of a connected passage of English prose, to test the candidate's familiarity with grammar.

The candidate will be expected to show a thorough knowledge of accidence, the principal uses of prepositions and conjunctions, and the essentials of syntax, especially the uses of the modal auxiliaries and of the subjunctive and infinitive modes.

The candidate ought to have read not less than six hundred pages of classical and contemporary prose and verse. It is recommended that the reading be selected from such works as Schiller's *Jungfrau von Orleans*; Goethe's *Iphigenie*; Freytag's *Die Journalisten, Soll und Haben, Bilder aus der deutschen Vergangenheit*; Riehl's *Culturgeschichtliche Novellen.*

In general, to obtain four units in German, four years' work in a good preparatory school is required.

SPANISH

I. One Unit.—

(a) The translation at sight of simple Spanish prose.

(b) The essentials of grammar, including the conjugations of the regular and the most frequently used irregular verbs. The translation into Spanish of short sentences, intended to test the candidate's knowledge of the essential points in grammar. Conversation and dictation.

In general, one year's work in a preparatory school, or its equivalent, is necessary to meet the requirements for one unit. The candidate will be expected to have worked through a short Spanish grammar, or the principal parts of a more complete one, and to have read at least one hundred pages of simple Spanish. Suitable texts for one unit are: *Spanish Reader,* Bransby; *Victoria y Otros Cuentos,* Asensi; *Gil Blas,* Padre Isla; *El Pájaro Verde,* Valera; *O Locura o Santidad,* Echegaray; *Zaragüeta,* Carrión y Vital Aza; *El Clavo* Alarcón, etc.

II. Two Units.—

In general, two years' work in a preparatory school, or its equivalent, will be needed to meet the requirements for two units. In addition to the work outlined in Paragraph I, the candidate will be expected to have worked through an elementary composition book and to have read from two to three hundred pages of modern Spanish. Suitable texts for the second unit are: *El Capitán Veneno,* Alarcón; *El Si de las Niñas,* Moratin; *Doña Perfecta,* Galdós; *Guzmán el Bueno,* Gil y Zárate; *Cuentos Alegres,* Taboada; *Legends, Tales, and Poems,* Bécquer; *El Haz de Leña,* Núñez de Arce; *José,* Valdés, etc.

MATHEMATICS

I. ALGEBRA. ONE UNIT. DEFINITIONS.—Integral numbers. Rational numbers. Irrational numbers. The six fundamental operations of algebra. Algebraic expressions. Rational algebraic expressions. Application of the four fundamental operations to rational algebraic expressions. The use of parentheses. Especial emphasis given to working within the parentheses. Factoring, determination of highest common factor and lowest common multiple by factoring. Fractions, simple and complex. Simple equations, both numerical and literal, containing one or more unknown quantities. Systems of equations. Problems depending on linear equations. Involution and evolution of monomials and polynomials. Radicals, including rationalization. Exponents, including the fractional and negative. Imaginary quantities. Elementary treatment of quadratic equations. The solution of simple problems in quadratic equations.*

II. ALGEBRA. ONE AND ONE-HALF UNITS.—In addition to paragraph I, the following: The completion of quadratic equations, both numerical and literal. A standard form for the solutions of these equations. The discriminant condition for equal roots, real and imaginary roots. Relations among the roots and the co-efficients of the equation. The nature of the roots when the different co-efficients approach zero. Simultaneous quadratic equations. Systems of equations, simple and quadratic. Property of quadratic surds and solution of equations containing radicals. Problems leading to quadratic equations. Ratio and proportion. The binomial theorem for positive integral exponents.

III. ALGEBRA. TWO UNITS.—In addition to the work outlined in paragraphs I and II, the following: Convergence of infinite series. Binomial theorem with fractional negative exponents. Exponential and logarithmic series. Formation of logarithms to base e, to base 10. Properties and application of logarithms. The progressions. Continued fractions.

IV. PLANE GEOMETRY. ONE UNIT.—The work required in Plane Geometry is practically the equivalent of the first five books in Sanders', Wells', or Wentworth's Geometry. Emphasis should be given to the demonstration of original problems and the solution of

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*It is assumed that the pupils will be required throughout the course to solve numerous problems which involve putting questions into equations. Familiarity with the metric system is pre-supposed. Some of these problems should be chosen from mensuration, from physics and from commercial life. The use of graphic methods and illustrations, particularly in connection with the solution of equations, is also expected. On the other hand, the student must be guarded against the tendency to become mechanical in his algebraic work. Algebra is not to be used as a T-square. Above all, the student should be thoroughly grounded in the fundamental principles, operations and definitions. It is recommended that Wells's Academic Algebra, Wentworth's Algebra, or an equivalent be used.

original exercises, including loci problems. Application to the mensuration of lines and plane surfaces.

V. Solid Geometry. One-half Unit.—The usual theorems and constructions found in good text-books. Emphasis should be given to the demonstration of original problems and the solution of original exercises, including loci problems. Application to the mensuration of surfaces and solids.

VI. Plane Trigonometry. One-half Unit.—Definitions and relations of the six trigonometric functions as ratios, not as lines. Circular measurement of angles. Proofs of principal formulas, in particular those for the sine, cosine and tangent of the sum and the difference of two angles, of the double angle and the half angle, the product expression for the sum or the difference of two sines or of two cosines, etc.; the transformation of trigonometric expressions by means of these formulas.

VII. Trigonometry. One Unit.—In addition to Paragraph VI, the following: Solutions of triangles, right-angled and oblique, requiring a knowledge of logarithms. Application to heights and distances. Demoivre's Theorem. Properties of spherical triangles. Formulas connecting the sides and angles of spherical triangles. Napier's Analogies. Gauss' Theorem. Solution of spherical triangles.

PHYSICS

One Unit.—The candidate must be well prepared in the elementary theory of the subject and must present a note-book showing the quantitative work done by him in the laboratory. One full year of four to five periods a week is necessary to meet the requirements for one unit.

The instruction in the class-room should include qualitative lecture-room experiemnts, the solution of numerous problems, and the study of some one standard text-book.

Every candidate for admission on examination is required to present a laboratory note-book, signed by the teacher, containing the results of quantitative experiments performed by him in the laboratory. At least thirty quantitative experiments must have been performed, of which ten must be in mechanics, and which must also include three of the subjects, light, heat, electricity, and sound. The thirty experiments are to be selected from some standard list such as the list adopted by the National Education Association, which may be found in *The Teaching of Chemistry and Physics*, Smith and Hall, Chapter X.

Laboratory note-books will be examined for neatness, language, accuracy, and proficiency in physics. They should be called for within one month after presentation.

CHEMISTRY

One Unit.—The student's preparation should consist of an elementary course in chemistry (one year)* of the character taught in the better class of high schools. It should include:

(a) Individual laboratory work, to the extent of at least one-third of the time;

(b) Instruction by lecture table demonstration, to be used when expensive apparatus or superior skill in manipulation is indispensable;

(c) The study of at least one standard text-book, to the end that the pupil may gain a connected view of the subject.

Either in the class-room or by experimental treatment in the laboratory, the course should take up for consideration the important modes of occurrence, the principal methods of preparation, the essential physical and chemical properties, and the recognition of the elementary substances and their chief compounds, commonly considered in the standard text-books. More detailed study should be given to those of frequent occurence, or of especial scientific importance.

At the time of and as part of the examination in chemistry, every student must present a note-book, containing a description of at least forty experiments. The note-book should include drawings of essential pieces of apparatus used, and an index of the experiments. The laboratory note-book should be called for within one month after presentation.

Text-books recommended: Alexander Smith, Brownlee and Others, McPherson and Henderson, Hessler and Smith, and Remsen (Briefer Course). Other texts than the one prescribed should be available to the student for reference. Ostwald's *Conservations on Chemistry* will be found stimulating and suggestive for collateral reading.

ZOOLOGY

One Unit.—The candidate will be required to present his original note-book of practical laboratory study, together with the dates and the endorsement of his teacher, certifying that the book is a true record of the pupil's own work. The note-book should contain carefully labeled outline drawings of the chief structures studied in at least fifteen different animals, together with notes on the same. The note-book will be graded as one-third of the examination. The student will be expected to know the classification of animals into phyla and classes, and he must be able to state the chief characteristics and to compare the general life activities of examples of each of the principal classes. He must know the general plan of internal structure

*The course should cover from thirty-five to forty weeks, with four to five hours per week. Two hours of laboratory work count as one period of recitation.

of one vertebrate (frog or fish) in general comparison with the human body; an arthropod (crustacean or insect); an annelid (earth-worm or Nereis); a coelenterate (hydroid, hydra or sea-anemone); a protozoan (a ciliate and amoeba when possible). A mollusk (clam or mussel), an echinoderm or a second vertebrate may be substituted for any of the above types. A knowledge of the very general features of cell division, of the cellular nature of germ-cells, and the essentials of embryological development will be expected, as well as some understanding of the main facts involved in the struggle for existence, adaptation to environment and variation of individuals.

One full year of at least five periods a week is necessary to meet the requirements for one unit.

Such books as Colton's *Descriptive and Practical Zoology*, Harvey's *Introduction to the Study of Zoology*, or Kingsley's *Comparative Zoology* cover this ground adequately. At least half of the student's work must have been laboratory work, guided by definite directions.

BOTANY

One Unit.—At least half of the student's work must have been laboratory or field work, and a note-book containing careful records of personal observations, illustrated by accurate drawings, must be presented.

Bergen, Atkinson, Bessey, Coulter, and Leavitt are representatives of the type of elementary texts accorded recognition. A full year's work is required for one unit of credit.

Important requirements for recognition are as follows: a knowledge of the common plants of the student's locality, including their classification, structural adaptations for local conditions and any relation to human life which they possess, a general understanding of the importance of bacteria and fungi as the cause of disease and the practical measures for their control, and some understanding of heredity, reproduction, and evolution in plants and living organisms.

BOTANY AND ZOOLOGY

One Unit.—A unit will be accepted only when botany and zoology have each been studied for half a year in one continuous course which extends throughout the year. Such a course will be reckoned as a one-unit course in biology. A half year of one, independent of the other, will not be accepted. It is strongly recommended that the student devote an entire year to botany or to zoology for one unit, instead of combining botany and zoology for a single unit.

At least half of the work must have been laboratory work guided by definite directions. A laboratory note-book containing drawings

and observations upon at least ten kinds of animals (both vertebrate and invertebrate) and ten kinds of plants (both flowering and non-flowering) must be presented with the certificate of the teacher that it is the student's own work. The student will be required to answer in writing general questions upon familiar animals, such as the frog, fish, earth-worm, paramoecium, crayfish, etc., and upon common plants, such as the fern, moss, mushroom, and simple flowering plants. In both botany and zoology a knowledge of the names and distinguishing characteristics of the different phyla and their classes will be required. The note-book will count for one-third of the work.

PHYSICAL GEOGRAPHY

ONE-HALF UNIT.—The scope of the work required for one-half unit in physical geography is represented by the standard modern text-books, some of which are named below. This includes the earth as a whole, atmosphere, ocean and land, with special emphasis on the work of water on the land in making topographic features. Entrance examinations may include simple interpretations of topographic maps, weather maps, and such charts as are given in text-books, the pointing out of features of scientific importance in such pictures as are used in text-books, and simple demonstrations with globes.

Among the high school text-books regarded as suitable are those by Dryer, Tarr, Gilbert and Brigham, Davis, and Arey Bryant Clendennin and Morey.

No student will be admitted to the entrance examination in physical geography after he has received credit for any science work in the University.

ASTRONOMY

ONE-HALF UNIT.—The student should be familiar with:

(a) Such fundamental notions and definitions as are necessary to locate celestial bodies.

(b) The names and positions of the most conspicuous stars and constellations, and be able to trace the positions of the ecliptic across the sky at certain times during the year.

(c) The most important facts concerning the form, dimensions, mass, density, rotation and orbital motion of the earth, including seasons, tides, eclipses, and other dependent phenomena; also methods for determining the mass of the earth.

(d) The essentials concerning the sun, moon, and planets, including methods for determining their respective distances, motions, etc.

(e) The different classes of objects found in the stellar universe—binaries, variable stars, nebulae; also the principles of spectroscopic observation.

Every student should visit a well-equipped observatory at least twice, once during the day to examine the apparatus, and once at night to view the heavens.

HISTORY

I. General History, or Medieval and Modern History. One Unit.—General History: Myers, Barnes, or G. B. Adams (complete); Medieval and Modern History: Munro and Whitcomb, Myers, Thatcher and Schwill, Harding's *Essentials*, or Robinson's *History of Western Europe* (complete).

II. English History. One Unit.—English History: Montgomery, Walker, Andrews, Cheyney, Larned or Wrong (complete). (Where half time is given to this subject a half unit may be offered.)

III. Ancient History. One Unit.—Ancient History: Myers, Seignobos, West, or Wolfson (complete). (Where half time is given to the subject a half unit may be offered.)

IV. American History. One Unit. — American History: Adams and Trent, Channing, Larned, McLaughlin, Montgomery (student's), McMasters, or Hart's *Essentials* (complete).

V. American History and Civics. One Unit.—See list in IV for American History. For Civics, Garner, J. W.: *Government in the United States*, or an equivalent text.

CIVICS

One-Half Unit.—Garner, J. W.: *Government in the United States*, or an equivalent text.

ECONOMICS

Economics. One-half Unit. — This course should consist, primarily, of a study of economic organization, with special reference to the conditions existing in the United States; and, secondarily, to a concrete presentation of economic principles. The student should become familiar with market methods and the rules governing them; the transportation system and the agencies for the public control thereof; the kinds of money in use, their main characteristics, and the conditions of issue; the distinguishing features of the various kinds of banks and the functions performed by them; and labor unions, labor laws, and the machinery for their enforcement. The best results can be obtained by following the topical method, and

requiring the student to investigate personally the economic structure of the community in which he lives and its relation to other communities.

COMMERCIAL GEOGRAPHY

One-half Unit.—The work of this half-unit should be based on a standard text such as Adams, Robinson, or Gannett, Garrison, and Houston. The course should include a discussion of (1) the physical and human factors that affect commerce, (2) the chief commodities of commerce, and (3) the resources, development, and trade of the leading commercial nations with emphasis upon the United States. As far as possible, the work should be illustrated by trips to local industries and by specimens of commercial products.

BOOKKEEPING

Bookkeeping. One Unit.—The unit of work in bookkeeping for college entrance should consist of a working knowledge of double entry bookkeeping for the usual lines of business. The student should be able to change his books from individual to partnership, and know the importance of the partnership agreement and its relation to bookkeeping. At least one set of transactions should be kept by single entry, and at least two sets by double entry, in which the uses of the ordinary bookkeeping books and commercial papers should be involved. The student should be drilled in the making of profit and loss statements and of balance sheets and should be able to explain the meanings of the items involved in both kinds of instruments. The work should be done under the immediate supervision of a teacher, and the student should devote an equivalent of at least ten periods (of not less than forty minutes full time) in class each week for one academic year.

Advanced Bookkeeping and Business Practice. One Unit.—The student should be taught the principles of single entry and its relation to double entry. He should be required to change single entry to double entry and be given a thorough drill on standard business forms, such as bills, receipts, checks, notes, etc., also on the use and meaning of business symbols and abbreviations. The student should become acquainted with the bill book and invoice book, and the loose leaf and voucher systems and bookkeeping. Each student should carry on a business of his own, first as an individual, then as a partnership, and finally as a corporation. Credit on this course should mean that the student lacks only age and actual business experience to become a competent bookkeeper. The work should be done under the immediate supervision of a teacher, and the student should devote an equivalent of at least eight periods (of not less than forty minutes full time) in class each week for one academic year.

STENOGRAPHY AND TYPEWRITING

STENOGRAPHY AND TYPEWRITING. ONE UNIT, TWO YEARS.—This work is expected to occupy not less than two periods daily for two years. No credit should be given for either shorthand or typewriting if taken alone. Nothing but the touch method should be used in typewriting. The essentials are, first, accuracy and speed in taking dictation and transcribing notes; secondly, correct spelling, capitalization, punctuation, and paragraphing. The minimum speed at the end of the first year should be 75 words per minute in dictation and 25 words per minute on the machine, and at the end of the second year, 100 words per minute in dictation and 35 words per minute in transcribing notes.

COMMERCIAL LAW

ONE-HALF UNIT.—The purpose of the law course is to give the students as clear an understanding as possible of their legal rights and limitations in the ordinary business relations of life; some attention is given to the fundamental concepts which underlie all law, rights, duties, wrongs, and remedies. The principal subjects included in the course are contracts, negotiable paper, agency, partnership, corporations, real property, personal property, deeds, and mortgages. Gano's *Commercial Law* is a suitable text.

DRAWING

ONE UNIT.—One unit for entrance will be allowed for freehand drawing or mechanical drawing, or both. The student must have done the equivalent of at least two year's work of not less than four periods a week of forty-five minutes each.

The work in freehand drawing should include outline drawing from models, principles of light and shade, application of conventional forms, ornaments, design, etc.

The course in mechanical drawing should cover lettering, simple geometric problems, projections, solution of problems of helix, cycloid, parabola, etc.

The candidate for admission on examination must present at the time, and as a part, of his examination, a full set of drawings, with the teacher's certificate that they are the candidate's work.

MANUAL TRAINING

Manual Training Including Shop Work and Mechanical Drawing.—Credit will be allowed in this subject to the extent of from one to four units according as one, two, three, or four years are devoted to the work; but it must be done in accordance with the regulations governing laboratory work; that is, twice the time must be given to the subject each week as is given to a regular academic subject.

The course must include carpentry, wood turning, pattern making, foundry work, forging, and machine work, and the proper courses in drawing must accompany such work.

The candidate for admission on examination must present at the time, and as part, of his examination, a certified list of courses completed by him, the drawings for the same, and such statements of his work as will give an adequate idea of the efficiency of the course.

HOUSEHOLD ARTS

One to four units of credit is allowed in Household Arts according as one, two, three, or four years are given to this work; but it must be done in accordance with the regulations governing laboratory work, that is, twice the time should be given to this work each week as is given to the academic studies which it displaces.

One or two units may be offered in Domestic Art. The course should include a study of textiles, the use of commercial patterns in the construction of undergarments and simple dresses, straight-rule drafting of patterns, and art study applied to clothing and elementary millinery.

One or two units may be offered in Domestic Science. The course should include a study of cost, care, preparation, and simple service of foods. The applicant must show a control of the technology of cookery.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

The degree of Bachelor of Arts is the only degree conferred upon graduates of the College of Liberal Arts.

One credit in the scale of University work is a subject taken for one period a week for one semester. In all laboratory courses, two and one-half hours in the laboratory are considered as equivalent to one recitation hour and the preparation therefor. Students who have satisfied the requirements for admission, but who take less than twelve hours per week, are called "irregular students," and they must pay a tuition fee in every instance. (See "Fees.") No student is permitted to elect courses in more than five departments in any one semester.

All students who are candidates for the degree of Bachelor of Arts must fulfill the following requirements:

Each student must obtain 124 credits. Of these credits, 56 to 60 must be taken in prescribed subjects, 4 in physical education, and 30 to 34 under the direction of the student's Adviser in the major groups of studies. The remainder may be freely elected. No

student, however, may count toward his 124 credits for graduation more than 6 credit hours of work marked "D," or "poor," in any one semester. But this restriction shall not operate to prevent his counting courses so marked toward the completion of his prescribed work.

Prescribed Subjects for Lower Classmen

English	10 to 12 credits
Foreign Languages	12 credits
Laboratory Sciences	10 to 12 credits
History, Economics, Political and Social Science	12 credits
Mathematics, Philosophy, Psychology	12 credits

The above subjects must be completed before the beginning of the Junior year, except that a Sophomore, with the permission of the Advisory Committee and the approval of the Dean, may postpone the performance of not more than 12 credit hours of prescribed work (one-fifth of the total amount) to the Junior year, but only in so far as the prescribed work conflicts with the continuity of studies leading toward the fulfillment of a Major.

Subjects in Major Groups for Upper Classmen

I. Greek, Latin, English, German, French, Italian, Spanish
II. Physics, Chemistry, Zoology, Botany, Geology, Physiology
III. History, Economics, Political and Social Science
IV. Mathematics, Philosophy, Psychology, Astronomy

At the end of the Sophomore year, or at the beginning of the Junior year, each student shall designate one of the following groups from which he must select his major subject. Thereafter, the head of the department in which that subject lies shall act as his Adviser. For graduation, at least 18 credits must be secured in this major subject; and 12 additional credits must be secured in subjects in the same group or in allied subjects specified by the Adviser.

The requirements stated above are illustrated in detail in the following diagrams:

OUTLINE OF STUDIES IN THE COLLEGE OF LIBERAL ARTS

A. B. Degree

120 Academic Credits + 4 Credits in Physical Education

60 Required — 60 Elective

30 Directed — 30 Free

From any subject of the 4 years with whole or reduced credits.

Subjects in Groups	Credit Hours	When Completed
1. Eng. Lang	10 to 12	1st and 2nd years, except as 12 credits may be deferred to Junior year by permission.
2. Modern & Classical Lang.	12	
3. Natural Sciences	10 to 12	
4. Hist., Econ., Polit. and Soc. Sci. ...	12	
5. Math., Phil. & Psy	12	
Phil., Psy., Pol. and Soc. Sci. not open to Freshmen	56 to 60	

Major Groups	When Taken
I. Language and Literature.	3d and 4th years
II. Natural Sciences	
III. Hist., Econ., Polit. and Soc. Sci.	
IV. Math., Phil., Psy., and Astron.	

Major Subject — Major Distributed Credits

18 credits in one department, with head of department as student's Adviser.

12 credits in same group as Major subject or in allied subjects as specified by Adviser.

Freshman Requirements

Prescribed Subjects	Credit Hours a Week per Sem.	Special Regulations
English	3	Every Freshman must take English 1
Foreign Language	3	
Science or Mathematics.	5 or 3	If a student elects mathematics in place of science, he must elect also either history or economics.
History, Economics, or Mathematics	3	
Physical Education.....	1	
Total Prescribed Hours.	15 or 13	Maximum hours allowed per semester, 17.

Courses Open to Freshmen

Subjects	Courses, Prescribed and Elective	Credit Hours a Week per Sem.
English	English 1, 5	3
	English 3, 9	2
Foreign Language	French 1 (beginners)	3
	French 2 (after 2 yrs. high school French)	3
	French 5 (after 2 yrs. high school French)	2
	French 11 (after 4 yrs. high school French)	3
	German 1 (beginners)	3
	German 2 (after 2 yrs. high school Ger.)	3
	German 3, 20 (after 2 yrs. high school Ger.)	2
	German 4 (after 4 yrs. high school Ger.)	3
	German 21 (after 4 yrs. high school Ger.)	2
	Greek 9 (beginners)	3
	Greek 15 (after 1 or 2 yrs. high school Greek)	3
	Greek 1 (after 3 yrs. high school Greek)	3
	Greek 10 (after 3 yrs. high school Greek)	2
	Italian 7 (beginners)	3
	Latin 1 (after 4 yrs. high school Latin)	3
	Spanish 6 (beginners)	3
	Spanish 9 (after 2 yrs. high school Spanish)	3
	Spanish 14 (after 4 yrs. high school Spanish)	3
	Spanish 18 (after 2 yrs. high school Spanish)	2
Natural Science	Astronomy 1b	2
	Botany 1a and 2a, 3b and 4b	5
	Chemistry 1a and 2a, 3b and 4b	5
	Geology 1	5
	Physics 26a and 2a, 27b and 22b	5
	Zoology 1 and 2	5
Mathematics	Mathematics 1, 3, 4	3
History	History 1, 13, 15	3
	History 29	2
Economics	Economics 1, 2	3
Physical Education	Physical Education 1	1

Sophomore Requirements

Completion of the Prescribed Work (including 2 credits in physical education), except in so far as such work may be deferred to the Junior year by special permission, as provided above.

Maximum hours allowed, exclusive of physical education, 18 a week.

Junior Requirements

Completion of such Prescribed Work as may have been deferred from the Sophomore year, and the election and pursuit of Major Work.

Maximum hours allowed, 18 a week.

Senior Requirements

Completion of 124 credits, including the fulfillment of the requirement of 30 credits for a Major.

Maximum hours allowed, 18 a week.

Free Electives

At any time during his four years of residence a student may elect any courses then open to him, provided that such electives do not conflict with the performance either of his Prescribed Work or of his Major Work.

A Senior electing courses designed primarily for Freshmen will receive for the same only half credit.

ADVISORY SYSTEM FOR THE ELECTION OF STUDIES

To the Advisory Committee for the Election of Studies is confided the duty of assisting Freshmen and Sophomores in registering for the subjects best adapted to their aims and abilities and of counselling them in all matters affecting scholarship.

Freshman and Sophomore students are required to conform to the following regulations:

For Freshmen

1. Each Freshman at the first semester registration days will be assigned by the Chairman to a member of the Committee, who will act as his temporary Adviser, and assist him in registering;

2. Within one month from this registration, each Freshman must appear before the Chairman of the Committee and be assigned, after consultation, to some member of the Committee who will act as his permanent Adviser;

3. At the second semester registration day, each Freshman will register with his own Adviser;

4. On or before May 1 of the Freshman year, each student will go to his Adviser and, in consultation with him, choose his studies for the Sophomore year. The schedule of studies must then be taken to the Chairman for approval.

For Sophomores

1. In the Sophomore year, each student on the first semester registration days must go to his own Adviser and register in accordance with the schedule of studies chosen in the manner just outlined. If, in the meantime, any changes have been decided upon, he must consult his Adviser and obtain the approval of the Chairman before registering;

2. At the second semester registration day each Sophomore will register with his own Adviser;

3. On or before May 1, each Sophomore must go to his Adviser and, after consultation with him, and with the representative of any department concerned, he must choose his major course of studies for the Junior year;

4. No Sophomore will be allowed to register for Major Work unless he has fulfilled at least four-fifths of the required work of the Freshman and Sophomore years, and has obtained from the Chairman a certificate to that effect.

Major Advisers

Every student of the Junior and Senior years will register with the head of the department in which he elects his Major, and this person will act through his Junior and Senior years as his Adviser.

SPECIAL ARRANGEMENTS

Credit for Work Done in the College of Law.—A student who has received credit for the work of the first two years in the College of Liberal Arts may, in the third year, elect from four to six hours per semester of the lectures of the first year of the law course, as a substitute for studies in the College of Liberal Arts, and in the following year he may, in the same way, take the remainder of the thirteen hours of the first year's course in the College of Law. Or, if he so desires, he may elect, in his Senior year, the entire thirteen hours of the first year law course (equivalent to twenty-six credit hours in the College of Liberal Arts), provided he has fulfilled all the requirements for obtaining his A.B. degree. Thus a student may obtain both the academic and legal degrees in six years. In either of the above cases, the student will be classified as an irregular student in the College of Liberal Arts, and will be required to pay tuition at the regular rate of three dollars per credit hour per semester, if a citizen of Cincinnati, and five dollars, if a non-resident.

Six-Year Combined Collegiate and Medical Course.—In this combined course the student takes the first two years of work in the College of Liberal Arts, and the last four in the College of Medicine. At the end of the fourth year, he is granted the degree of B.S., and at the end of the sixth year, the degree of M.D.

Four-Year Combined Collegiate and Commercial Course.—In this combined course the student takes the first two years of work in the College of Liberal Arts, and the last two in the College of Commerce. At the end of the fourth year he is granted the degree of B. S.

Credit for Hebrew Taken in the Hebrew Union College and in Lane Theological Seminary.—Arrangements have been made with the Hebrew Union College and with Lane Theological Seminary, whereby students of these institutions who are pursuing a course in the University of Cincinnati may be allowed to count work in Hebrew taken in these institutions for the degree of Bachelor of Arts, to the amount of two hours a week throughout the Freshman and Sophomore years, and three hours a week throughout the Junior

and Senior years, for the Hebrew Union College, and three hours per week for three years in Lane Theological Seminary, provided such work is regularly entered upon the election schedules of the University.

CREDIT FOR WORK DONE IN THE ART ACADEMY OF CINCINNATI.—By an arrangement with the Art Academy of Cincinnati, students from the University may elect from the courses stated in the catalogue in drawing, modeling, and carving, not more than six hours' work in any one semester, and receive credit therefore on the books of the University, provided these courses have been duly entered on the election blank and the proper certificate from the Director of the School is presented on their satisfactory completion. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

COURSES OF INSTRUCTION

ASTRONOMY

JERMAIN GILDERSLEEVE PORTER, PH.D., Director of the Observatory and Professor of Astronomy

For Undergraduates

1b. Descriptive Astronomy.—Lectures and class work. No mathematical training is required beyond a geometrical conception of the sphere and its circles. The object of the course is to give a comprehensive view of astronomy in its historic and practical relations, as well as a general résumé of our knowledge concerning the heavenly bodies. Reference books: *Popular Astronomy*, Newcomb; *Manual of Astronomy*, Young; *The Stars in Song and Legend*, Porter. T., Th., 10:30-11:30, *second semester*. Professor Porter.

For Undergraduates and Graduates

3. Spherical and Practical Astronomy.—Text-books: Campbell's *Elements of Practical Astronomy*; Chauvenet's *Spherical and Practical Astronomy*. Once a week throughout the year. Professor Porter.

4. Celestial Mechanics.—Investigation of the fundamental equations of motion and of the formulae for determining the positions of bodies revolving about the sun. Computation of orbits. Text-books: Watson's *Theoretical Astronomy*. Once a week throughout the year. Professor Porter.

Courses 3 and 4 will ordinarily be given at the Observatory. Hours to be arranged.

BIBLICAL LITERATURE

SELBY FRAME VANCE, A.M., D.D., Lecturer on Biblical Literature

For Undergraduates and Graduates

11a. Poetry.—The dramatic, epic, and lyric poetry of the Hebrews. *First semester*, T., Th., 11:30-12:30. Dr. Vance.

11b. Epistles.—Letter writing in the Greco-Roman world. The epistles of Paul and other apostles. *Second semester*, T., Th., 11:30-12:30. Dr. Vance.

Courses Given Regularly but Omitted during 1916-17.

8a. Old Testament Narrative.—*First semester*. Dr. Vance.

8b. New Testament Narrative.—*Second semester*. Dr. Vance.

9a. Eighth Century Prophets.—*First semester*. Dr. Vance.

9b. Social Teachings of the Prophets, of the Sages, and of Jesus.—*Second semester.* Dr. Vance.

10a. Later Prophets.—*First semester.* Dr. Vance.

10b. Wisdom and Apocalyptic Literature.—*Second semester.* Dr. Vance.

Evening Course

30. Poetry and Epistles.—F., 7:30-9:30. Dr. Vance.

BOTANY

HARRIS MILLER BENEDICT, Ph.D., ... Professor of Botany
ORVILLE TURNER WILSON, Ph.D., ... Instructor in Botany
ASSISTANTS: E. Lucy Braun, Ph.D.; Newton B. Green, A.B.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students contemplating training in agriculture at an agricultural college should, after consultation with the head of this department, register for Courses 1a to 4b.

Students who desire to be recommended as teachers of botany in secondary schools must complete as a minimum, Courses 1a to 4b inclusive, and Course 5. It is very desirable that they also do at least one year of graduate work.

For Undergraduates

1a. Plant Biology.—A course of lectures and discussions on the nature, origin, and evolution of life, and on the laws which control growth, development, reproduction, and heredity. The applications of these principles to the specific economic problems of plant culture, plant breeding, soil fertility, and sanitation are emphasized throughout. This course must be taken in connection with Course 2a. *First semester.*

Sec. I, M., W., F., 8:30-9:30.
Sec. II, M., W., 11:30-12:30; F., 1:00-2:00. Professor Benedict.

Course 1a is required as a prerequisite to all other courses in botany and agriculture.

2a. Experimental Plant Biology.—Experimental investigation of the basic biological problems. The results of these experiments serve as the basis for the discussion of biological principles and economic applications in Course 1a.

Sec. I, M., W., 1:00-4:00. Sec. III, T., Th., 9:30-12:30.
Sec. II, T., Th., 1:00-4:00. Sec. IV, T., Th., 8:30-11:30.

Professor Benedict, Dr. Wilson, Mr. Green, ————.

3b. Plant Biology.—A continuation of Course 1a. Among the topics studied are the characteristics of different groups of plants, the representatives of the latter in the local flora, and their distribution in relation to the laws of ecological succession. The origin, evolution, and distribution of plants of economic value are studied. This course must be taken with Course 4b. *Second semester.*

Professor Benedict.

4b. Plant Biology, Laboratory.—Laboratory and field study of the wild and cultivated plants of this region including their variation and distribution. This course must be taken with Course 3b. *Second semester.* Continuation of Course 2a.

Professor Benedict, Dr. Wilson, Dr. ———, Mr. Green.

5. City Botany.—Two field trips and one lecture per week on the flora of the city. The lecture will be given during one of the trips. Lec., Th., 1:00-2:00; lab., T., 1:00-4:00; Th., 2:00-4:00. Throughout the year. Professor Benedict and Dr. Braun.

Course 5 is required of all who desire the recommendation of the department to teach botany or biology in secondary schools or nature-study in elementary schools. It is also required in the second year of the pre-agricultural course. Open to those who have passed in Courses 1a-4b.

11. Sanitary Biology.—Lectures on the biological principles involved in sanitary engineering, designed to enable the engineer to solve local problems in sanitation and to appreciate the significance of specialists' reports. M., 2:00-3:00, throughout the year.

Professor Benedict.

12b. Field Ornithology.—A field study of the identification, classification, songs, and habits of our native birds. One laboratory period per week during the second semester. S., 6:00-9:00 A.M.

Professor Benedict.

For Undergraduates and Graduates

6a. Plant Histology.—Lectures on the general histology of the Spermatophytes, special attention being given to the physiological adaptations of the tissues to their functions. This course must be taken in connection with Course 7a. *First semester,* M., 1:00-2:00. Prerequisite: Courses 1a, 2a, 3b, and 4b. Dr. Wilson.

7a. Plant Histology Laboratory.—In this course the student will be given sufficient practice in microscopical botanical technique to enable him to prepare the slides which he will use in his laboratory study of the tissues of selected plants. Accurate drawings and descriptions will be required. Work on textile fibres and the identification of food adulterations will be included. This course must

be taken in connection with Course 6a. *First semester*, M., 2:00-4:00; W., 1:00-4:00. Dr. Wilson.

8b. The Reproduction and Embryology of the Spermatophytes.—Lectures on the origin and nature of sexual reproduction in the flowering plants and the general principles of Spermatophyte embryology. This course must be taken in connection with Course 9b. *Second semester*, M., 1:00-2:00. Dr. Wilson.

Prerequisite: Courses 6a and 7a.

9b. Reproduction of the Angiosperms.—A laboratory investigation of the origin of the sex cells and the formation of the seed in selected Angiosperms. While a few special slides will be supplied the student will be required to make his own preparations. This course must be taken in connection with Course 8b. *Second semester*, M., 2:00-4:00; W., 1:00-4:00. Dr. Wilson.

10. Special Problems.—Senior students who have completed three years of work in Botany, and who have shown exceptional ability, may choose a special problem for investigation, after consultation with the head of the department. The work may be taken as a two or a three-hour course at a time to be determined by conference. Professor Benedict.

Primarily for Graduates

20. Current Problems in Botany.—Lectures and discussions upon present problems in plant physiology. A reading knowledge of French or German is required. Two credit hours.

Professor Benedict.

Prerequisite: Courses 1a, 2a, 3b, 4b, 5, 6a, 7a, 8b, 9b.

21. Research.—Credit according to number of hours elected.

Professor Benedict.

CHEMISTRY

Lauder William Jones, Ph.D., ... Professor of Chemistry
Harry Shipley Fry, Ph.D., ... Associate Professor of Chemistry
Henry Max Goettsch, Ph.D., Associate Professor of Industrial Chemistry
Ernest E. Thum, E.M., ... Assistant Professor of Metallurgy
Albert Watson Davison, Ph.D., Instructor in Physical Chemistry
Edwin W. Esslinger, A.M., ... Instructor in Analytical Chemistry
M. Cannon Sneed, A.M., ... Instructor in Chemistry
——— ———, ... Instructor in Metallurgy

Assistant: Leonora Neuffer, A.M.

For Undergraduates

1a. General Inorganic Chemistry.—The Non-metals. This course gives a definite idea of the fundamental laws of general chemistry, and furnishes a survey of the important facts concerning the chemistry of the non-metals and their compounds. Lectures, recitations, and quizzes illustrated by experiments, charts, and specimens. Course 2a forms an integral part of, and must accompany Course 1a. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

2a. General Inorganic Chemistry, Laboratory.—Two laboratory exercises per week. *First semester.* Experiments complementary to the subject-matter of Course 1a.

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Associate Professor Fry and Assistants.

3b. General Inorganic Chemistry.—The Metals. A continuation of Course 1a. The properties of the metals and their compounds. Three hours per week. *Second semester.* Students who have completed Courses 1a and 2a are eligible for this course. It must be accompanied by Course 4b. M., W., F., 8:30-9:30.

Associate Professor Fry and Assistants.

4b. General Inorganic Chemistry Laboratory.—Two laboratory exercises per week. *Second semester.* Experiments complementary to the subject matter of Course 3b.

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00.

Associate Professor Fry and Assistants.

5a. Qualitative Analysis.—Lectures and recitations on the principles and practice of qualitative analysis. Considerable emphasis will be laid upon the application of the laws of chemical equilibrium, and the theories of solution and of electrolytic dissociation to the practical problems of the analyst. Three exercises a week. *First semester.* M., W., F., 8:30-9:30. Professor Jones.

Prerequisite: Courses 3b and 4b.

6. Qualitative Analysis Laboratory.—To accompany Course 5a. During the first few weeks of the semester the student will perform important tests commonly used in the processes of analyticnl chemistry. The later work of the course will furnish abundaat training in the qualitative examination of salts, minerals, alloys, etc. Two exercises a week, *first semester*; two laboratory periods and one quiz period, *second semester.*

Sec. I, M., W., 1:00-4:00.

Sec. II, T., Th., 1:00-4:00. Professor Jones and Assistants.

7. Quantitative Analysis.—An introductory laboratory course in gravimetric and volumetric analysis. Occasional conferences are held, at which analytical methods and calculations are discussed, and at which reports are submitted covering assigned reading. Three exercises a week. *First or second semester.* M., W., 1:00-4:00; F., 2:00-5:00.

Dr. Davison (first semester); Mr. Esslinger (second semester).

Prerequisite: Courses 5a and 6 (first semester).

8b. Elementary Organic Chemistry.—Three exercises a week. *Second semester.* Quizzes and lectures which are experimental, covering the chief classes of organic compounds of both the aliphatic and aromatic series. This course is arranged to meet the needs of those who intend to specialize in chemistry, in medicine, or in biology. It serves as a general introduction for those who intend to go deeper into the study of organic chemistry. M., W., F., 8:30-9:30.

Prerequisite: Courses 3b and 4b. Professor Jones.

9b. Organic Reactions and Preparations.—Laboratory practice to accompany the lectures of Course 8b. *Second semester.* Sec. I, M., W., 1:00-4:00; Sec. II, T., Th., 1:00-4:00.

Prerequisite: Courses 3b and 4b. Professor Jones and Assistants.

14b. Metallurgy.—Five credit hours per week. *Second semester.* A study of fuels, refractories, ferrous and non-ferrous metallurgy, and practice in metallurgical calculations. Emphasis is laid upon foundry and steel works processes. Excursions will be made to metallurgical establishments in Cincinnati and vicinity. M., T., W., Th., 9:30-10:30; M., 1:00-4:00.

Assistant Professor Thum and ——— ———

Prerequisite: Courses 5a, 6, and Physics 1.

15b. Assaying.—One afternoon a week. *Second semester.* Laboratory practice in the fire assay of ores and base metals for gold, silver, and lead. Hours to be arranged. ——— ———

Prerequisite: Course 7b.

16a. Technical Inorganic Chemistry.—Three periods a week. *First semester.* M., W., F., 9:30-10:30.

Prerequisite: Courses 5a and 6. Associate Professor Goettsch.

17. Technical Analysis.—The course consists of analyses of typical industrial products, involving the use of gravimetric, volumetric, gasometric, electrolytic, and colorimetric processes. May be taken either semester, or both semesters. Two or three credit hours.

Associate Professor Goettsch, assisted by Mr. Esslinger.

Prerequisite: Course 7b.

18b. Technical Organic Chemistry.—M., W., F., 8:30-9:30.

Associate Professor Goettsch.

Prerequisite: Courses 8a, 9a, and 16a.

[29a. Practical Photography.] One lecture and one laboratory period a week. *First semester.* The course embraces a study of the exposure and development of photographic plates; the treatment of defective negatives; the preparation and use of various printing papers; copying, enlarging, and lantern-slide making. W., 8:30-9:30; F., 2:00-5:00. Associate Professor Goettsch.

Prerequisites: Courses 1, 2, 3b, and 4b.

Omitted in 1916-17.

For Undergraduates and Graduates

10a. Advanced Inorganic Chemistry.—Two exercises a week during the first semester. Special topics and recent theories of inorganic chemistry, including colloids, reactions in non-aqueous solvents; inactive gases; radioactive elements and emanations; the electron; valence, structure, and co-ordination theories. T., Th., 8:30-9:30. Associate Professor Fry.

Prerequisite: Courses 8b and 9b.

11. Inorganic Preparations.—Two or three laboratory exercises a week. *First or second semester.* Experiments supplementary to the subject-matter of Course 10a. Hours to be arranged.

Prerequisite: Course 7b, 8b and 9b. Associate Professor Fry.

12a. Physical Chemistry.—Lectures and recitations. Three exercises a week. *First semester.* An introductory course which considers the general properties of gases, liquids, solids and solutions, as well as the principles determining reaction velocity and the equilibria in homogeneous and heterogeneous systems. M., W., F., 8:30-9:30. Dr. Davison.

Prerequisite: Chemistry 5a, 6a, 7b, 8b, and 9b, Physics 26a and 27b, Mathematics 5.

13a. Physical Chemistry Laboratory.—Two exercises a week. *First semester.* Designed to illustrate the principles developed in Course 12a, and to provide a knowledge of the common methods used in physical-chemical measurements. This course must accompany Course 12a. M., T., 1:00-4:00. Dr. Davison.

32b. Electro-chemistry.—Lectures and recitations. Three exercises a week. *Second semester.* A general consideration of the electrical properties of matter with special reference to the theory of aqueous solutions. M., W., F., 8:30-9:30. Dr. Davison.

Prerequisite: Course 12a.

33b. Electro-chemistry Laboratory.—Two exercises a week. *Second semester.* Determination of conductivity with its application, transference numbers, electromotive force, dielectric constant, etc. M., T., 1:00-4:00. This course accompanies Course 32b.

Dr. Davison.

34a. Colloid Chemistry.—A discussion of the theory and methods of formation of colloidal solutions, emulsions, gels, and suspensions; followed by the applications of colloid chemistry to the arts. *First semester.* Three lectures per week. Hours to be arranged.

Prerequisite: Courses 12a and 13a. Dr. Davison.

[41a. Phase Rule.] Lectures and recitations. A study of the phase rule and its applications. Two exercises a week. *First semester.* Hours to be arranged. Dr. Davison.

Prerequisite: Course 12a.

Omitted in 1916-17.

20. Advanced Organic Chemistry.—Three lectures and conferences a week, embracing a systematic study of the principles and practices of organic chemistry, and treating of the modes of formation, properties, and reactions of typical members of the most important classes of organic compounds. M., W., F., 10:30-11:30.

Professor Jones.

Prerequisite: Courses 5a, 6, 7, 8b, 9b, and a reading knowledge of German and French.

21. Advanced Organic Chemistry Laboratory. Practice in the preparation of a number of typical organic compounds. This course will require considerable reading in the journals of chemistry and in various hand-books and works of reference. Credit according to number of hours elected. May be taken either first or second semester, or both semesters. Professor Jones.

Prerequisite: As in Course 20.

24b. History of Chemistry.—Special attention is directed to the classical memoirs of the Greek philosophers, the tenets of the alchemists, and those researches of the past century that have developed the atomic and structure theories of modern chemistry. Lectures, collateral readings, and papers. Three exercises per week. *Second semester.* Hours to be arranged. Associate Professor Fry.

Prerequisite: Courses 5a, 6, 8b and 9b, or 20b and 21.

28b. Elementary Spectrum Analysis (Qualitative).—The course consists largely of laboratory work. The emission (flame and electric sparks) and absorption spectra of inorganic and some organic substances are studied from the chemist's point of view. Two laboratory periods a week. *Second semester*; hours to be arranged.

Professor Jones.

Prerequisite: Courses 5a, 6, 8b, and 9b; Physics, 1 year.

Primarily for Graduates

30. Research.

Professor Jones, Associate Professor Fry, Associate Professor Goettsch, Assistant Professor Thum, Dr. Davison.

During the summer of 1916, students engaged in research may enroll in the Graduate School.

35b. Some Special Problems and Theories of Organic Chemistry.—*Second semester.* Two hours a week, to be arranged.

Professor Jones.

40. Journal Club Meetings.—All students interested in chemistry are invited to attend. Meetings are held fortnightly, and last one hour. Subjects to be discussed are announced one week in advance.

ECONOMICS

(The Sinton Professorship)

FREDERICK CHARLES HICKS, PH.D., Sinton Professor of Economics and Commerce

JAMES DYSART MAGEE, PH.D., ... Assistant Professor of Economics

ASSISTANT: Mary Mallon, A.B.

Students desiring a general knowledge of economics are recommended to take Course 1 or Courses 1 and 2.

For Undergraduates

1. Economics.—This course is intended to give the students a general view of the fundamental principles of economics, with special reference to their relation to social problems. The method employed is, first, to consider some of the leading problems, such as money, trusts, tariff, socialism, and labor, with a view to ascertaining the fundamental principles involved. Following this, these principles are grouped systematically so as to present a comprehensive summary of the elements of economics. M., W., F., 9:30-10:30.

Professor Hicks.

2. Economic History.—A study of industrial development since the tenth century, including the economic history of the United States. Subjects considered: the local industry of feudalism, the manorial and guild systems; the rise of nationalism; the colonial policy and national regulation of industry under the mercantile system; the industrial revolution, 1750-1850; and the distinguishing features of the complex and highly developed economic organization of modern times. T., Th., 10:30-11:30. Assistant Professor Magee.

For Undergraduates and Graduates

15a. Railroads.—This course includes a study of the place of transportation in economic development; a brief description of the early technical development of the railroad; a history of the railroad

development in the United States; and a discussion of the problem of governmental regulation of railroads. *First semester.* M., W., F., 10:30-11:30. Assistant Professor Magee.

Prerequisite: Course 1.

15b. Tariffs.—The course begins with a study of the theory of international trade. It considers in some detail the tariff history of the United States, including the actual course of the duties and the arguments urged at the various times in favor of the different policies. Also the present tariff situation in England, France, and Germany is treated. M., W., F., 10:30-11:30. *Second semester.*

Prerequisite: Course 1. Assistant Professor Magee.

[16a. Labor.] The subjects treated in this course include: the development of the Trade Union; the forms of organization and federation; the aim and policies of Trade Unions; the legal aspects of Unionism; governmental regulation of working conditions; employers' associations; and methods of industrial peace. *First semester.* M., W., F., 10:30-11:30. Assistant Professor Magee.

Prerequisite: Course 1.

Omitted in 1916-17.

[16b. Money and Banking.] The elementary principles of money and banking are considered, together with the monetary history of the United States. In the discussion of banking, the history of the United States is treated in some detail. In the case of Germany, France, and England, the history is outlined briefly and the present situation discussed more fully. *Second semester.* M., W., F., 10:30-11:30. Assistant Professor Magee.

Prerequisite: Course 1.

Omitted in 1916-17.

17. Vocations for Women.—The first part of the course aims to give a survey of the number and kinds of vocations open to the trained woman. It describes the training required, the salaries and opportunities for advancement, and the work of particular women. The second part of the course deals with untrained women in industry, giving the history of labor organization among women in the United States and of labor legislation affecting women's industries. T., Th., 11:30-12:30. Miss Mallon.

Prerequisite: Course 1.

Primarily for Graduates

11. Elements of Economics.—T., Th., 9:30-10:30.

Professor Hicks.

Evening Courses

32. Economics (Similar to Course 1).—Th., 7:30-9:30.
Professor Hicks.

33. Economic History (Similar to Course 2).—W., 5:00-7:00.
Assistant Professor Magee.

30. Commercial Geography.—A study of the leading articles of commerce, including both raw materials and manufactured products, their character and relative importance, the principal sources of supply, and their distribution in the world's markets. W., 5:00-7:00.
Professor Towles.

31. Statistics.—The principles of the statistical method and their application to social and economic problems. M., 5:00-7:00.
Assistant Professor Magee.

34a. Railroads (Similar to Course 15a).—*First semester.* W., 7:30-9:30. Assistant Professor Magee.
Prerequisite: Course 32.

35b. Money and Banking (Similar to Course 16b).—*Second semester.* W., 7:30-9:30. Assistant Professor Magee.
Prerequisite: Course 32.

EDUCATION

For a complete list of courses in Education, see Announcement of the College for Teachers.

Candidates for the A.B. degree may count Education 1 or Education 9 and 11, to be taken in the Junior or Senior year, in partial fulfillment of the requirements for this degree.

Those students who wish both an A.B. degree and a Teacher's Diploma, must earn the latter by not less than a year's resident work in the College for Teachers, after completing the requirements for the A.B. degree.

Those students who wish to qualify in four years for teaching in elementary schools, will spend the first two years in the College of Liberal Arts and the last two years in the College for Teachers, receiving, at the end of the four-year period, the degree of Bachelor of Science conferred upon the recommendation of the Faculty of the College for Teachers.

For full information, including statements in detail concerning the requirements for those who wish to prepare for various positions in educational work, see Announcement of the College for Teachers.

ENGLISH

COMPARATIVE LITERATURE

(The Nathaniel Ropes Foundation for the Comparative Study of Literature)

FRANK WADLEIGH CHANDLER, PH.D., ... Professor of English and Ropes Professor of Comparative Literature
EMILIE WATTS MCVEA, A.M., ... Assistant Professor of English
BENJAMIN CARLTON VAN WYE, A.M., Assistant Professor of Public Speaking and of English
CLYDE WILLIAM PARK, A.M., ... Assistant Professor of English
BERTHA K. YOUNG, A.M., ... Assistant Professor of English
CLARENCE DIMICK STEVENS, A.M. . . Assistant Professor of English
HUBERTIS M. CUMMINGS, PH.D., ... Instructor in English
——— ———, ... Instructor in English

ASSISTANTS: Helen Stanley, A.M.; Madelaine Maury Wright, A.B.; Martha J. Gibson, A.M.; Agnes E. Van Slyck, A.M.

All students in English, before making their election of courses, are advised to consult with some member of the department, and to read carefully the departmental bulletin of information as to the proper sequence in which such courses should be taken.

No student should enter or withdraw from a two-semester course at the beginning of the second semester without first consulting both the instructor concerned and the head of the department.

Students majoring in English are required to take as part of their course either 7 or 10.

For Undergraduates

1. English Composition and Literature.—A course in the principles and practice of effective writing, in connection with a study of English prose. Nine sections: M., W., F., 10:30-11:30.

Assistant Professors McVea, Van Wye, Park, Young, Stevens; Mr. Fernberg, Dr. Cummings, Mrs. Wright, Miss Stanley, Miss Gibson, and Miss Van Slyck.

Course 1 is required of all students in the College of Liberal Arts in the Freshman year.

A practical test of each student's ability to write simple English will precede the regular work of this course. Those found to be notably deficient in spelling, punctuation, grammar, and paragraphing will be assigned to special Sub-Freshman sections. No college credit will be allowed for work in these sections, but students who show marked progress will be transferred to the regular college sections at the end of the first semester.

A passing grade received in English 1 may at any time lapse into a "condition," upon recommendation of the Department of English, or upon the joint recommendation of the English Department and any other department of the College of Liberal Arts. A condition thus incurred may be removed only at the examination period next ensuing, and if not removed within one semester, it will lapse into a failure. The method of removing the condition will be determined by the English Department according to the individual case; but, in any event, it must include a written test.

2a. Argumentation.—*First semester*, T., Th., 8:30-9:30.
Assistant Professor Van Wye.

Students who take English 2a should have completed both semesters of English 1 with a grade of "C" or better.

2b. The Forms of Public Address.—*Second semester*, T., Th., 8:30-9:30. Assistant Professor Van Wye.

Courses 2a and 2b are intended to serve as preparation for debating and effective public speaking. They are recommended for Sophomores and for those who may become candidates for the Jones prizes.

25. Public Speaking.—Control of the voice and body, correct enunciation, and practice in effective expression.
Sec. I, T., Th., 10:30-11:30.
Sec. II, T., Th., 11:30-12:30. Assistant Professor Van Wye.

Course 25 counts as only one University credit for the first semester. It is recommended for students who expect to take Course 13a.

13a. Debating.—*First semester*. T., 1:00-3:00.
Assistant Professor Van Wye.

Course 13a is open to students who have passed creditably in Courses 1 and 2a. Students interested in public speaking are advised to take Courses 2a and 2b one year, and Course 13 the next.

15b. Descriptive and Narrative Writing.—*Second semester*, T., Th., 11:30-12:30.

Course 15b is open to Sophomores and Juniors. Seniors will receive but half credit for it.

3. Types of Literature.—An appreciative rather than an historical study of the principal literary kinds—lyric, narrative verse, drama, prose fiction, and essay—illustrated by readings in representative masterpieces and involving considerable original composition. T., Th., 9:30-10:30. Professor Chandler.

Course 3 is recommended for Freshmen only. Other students will receive but half credit for it.

9. Survey of English Literature.—Lectures on the development of English literature from Anglo Saxon times to the present, involving the study of representative masterpieces considered chiefly from the historical point of view. Dr. Cummings.

Sec. I, T., Th., 8:30-9:30.

Sec. II, T., Th., 9:30-10:30.

Course 9 is recommended for Sophomores who have not had English 3.

5. Shakespeare.—A study of the life and times of Shakespeare, his dramatic methods, and the literary history of his plays. Some of the plays are examined in detail, and most of the others are assigned for reading. M., W., F., 9:30-10:30. Assistant Professor Young.

Course 5 is recommended for Freshmen and Sophomores.

4. Nineteenth Century Prose.—Studies in the thought and style of the great prose writers, other than novelists, from Coleridge to Carlyle (during the first semester), and from Emerson to Pater (during the second semester). M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

Course 4 is recommended for Juniors and Seniors.

18. American Literature.—A general survey of the development of literature in America, with especial attention to Irving, Hawthorne, Poe, Emerson, Longfellow, Lowell, Holmes, Whittier, and Whitman. T., Th., 1:00-2:00. Assistant Professor McVea.

16. Wordsworth and His Contemporaries.—A study of the English romantic poets of the early nineteenth century—Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats. M., W., F., 8:30-9:30.
Assistant Professor McVea.

For Upper-Classmen and Graduates

10. Chaucer.—The work and influence of Chaucer; his times, sources, contemporaries, and immediate successors, studied chiefly from the literary point of view. T., Th., S., 9:30-10:30.
Assistant Professor Stevens.

21. Bacon and Milton.—For the year 1916-17, this course may be substituted for course 7 (Old English) in fulfilment of the requirement of a major in English. S., 9:30-11:30.
Assistant Professor Young.

17. Studies in the Lyric.—An examination of European lyrical poetry as to typical moods and forms. Only those who satisfy the instructor of their ability to write fair verse may take this course. T., Th., 11:30-12:30. Dr. Cummings.

14. English Drama from Its Origins to 1642.—This course considers the origins of the English drama and its development to the closing of the theatres. T., Th., S., 9:30-10:30.
Assistant Professor Stevens.

24. Recent European Drama.—A study of the new dramatic literature, its varieties, technic, aims, and problems, beginning with the later plays of Ibsen, and considering the art and thought of such other representative writers for the stage as Björnson, Hauptmann, Sudermann, Schnitzler, Maeterlinck, Hervieu, Rostand, D'Annunzio, Echegaray, Strindberg, Tchekhov, Pinero, Jones, Phillips, Synge, and Shaw. T., Th., 1:00-2:00. Professor Chandler.

12. Literary Composition.—Play-writing. Only those who satisfy the instructor of their ability to write well are admitted to this course. The best pieces will be given amateur production. Th., 3:00-5:00. Assistant Professor McVea.

22. Foreign Backgrounds of English Literature.—An introduction to the literature of modern Europe, presenting a general survey of some of the more important works and tendencies since the Renaissance, with particular stress upon such as have proved influential in England. T., Th., 2:00-3:00. Professor Chandler.

26a. The Essay.—A consideration of the origin and history of the English essay, involving a study of the rise of periodical literature and some reading of foreign examples of the type. *First semester*, M., W., 1:00-2:00 Assistant Professor Park.

11. The English Novel.—The development of prose fiction in its longer forms, especially during the nineteenth century. W., 4:00-6:00. Assistant Professor Stevens.

8a. Hamlet and Macbeth.—A textual and critical study of these plays. *First semester*, T., 4:00-6:00. Dr. Cummings.

For Graduates Only

20. Seminary.—Studies in the Comic.—M., 4:00-6:00.
Professor Chandler.

For Teachers

For courses available for teachers see Courses 11, 20, 21, 8a, the evening courses, and the following:

40. Voice Training for Teachers.—A course in the fundamentals of voice placement, development, and control, with practice in interpretative reading, and study of effective use of the voice in the class-room. W., 4:00-6:00. Assistant Professor Van Wye.

Courses Regularly Given, but Omitted during 1916-17

6. Victorian Poetry.—M., W., F., 8:30-9:30.
Professor Chandler.

29. Methods and Materials in Secondary English.—S., 9:30-11:30. Assistant Professor Young.

7. Old English.—M., W., 11:30-12:30; F., 1:00-2:00.
Assistant Professor Young.

27. English Drama Since the Restoration.—M., W., 1:00-2:00; F., 2:00-3:00. Assistant Professor Park.

19. Elizabethan Literature in Its Continental Connections.—W., 4:00-6:00. Professor Chandler.

23. The Literary Movement of the Eighteenth Century.—W., 4:00-6:00. Professor Chandler.

Evening Courses

30. English Composition and Literature.
Sec. I, Th., 7:30-9:30. Assistant Professor Park.
Sec. II, T., 5:00-7:00. Assistant Professor Stevens.

[31. Nineteenth Century Poetry.]
Omitted in 1916-17. Assistant Professor Young.

[32. Nineteenth Century Prose.] T., 7:30-9:30.
Omitted in 1916-17. Assistant Professor Young.

33. Public Speaking. M., 7:30-9:30.
Assistant Professor Van Wye.

[34. Studies in Foreign Literature.] T., 7:30-9:30.
Omitted in 1916-17. Assistant Professor Young.

35. Shakespeare.—T., 7:30-9:30. Assistant Professor Young.

GEOLOGY AND GEOGRAPHY

NEVIN M. FENNEMAN, PH.D., Professor of Geology and Geography
J. ERNEST CARMAN, PH.D., ...Assistant Professor of Geology
WALTER H. BUCHER, PH.D.,.....Instructor in Geology

For Undergraduates

1. Introduction to the Earth Sciences.—Minerals and rocks, dynamic geology, origin and classification of topographic forms, atmosphere and ocean; followed by a brief study of the physiography of the United States. Lec., M., W., F., 8:30-9:30; lab., M., W.,

2:00-5:00; T., Th., 8:30-11:30; T., Th., 1:00-4:00; T., Th., 2:00-5:00. Professor Fenneman, Dr. Bucher, and Assistant.

2. Engineering Geology.—An introductory study of minerals and rocks, dynamic geology and topography, followed in the second semester by stratigraphic, structural, and economic geology. T., Th., F., 9:30-10:30; M., W., 9:30-11:30. Assistant Professor Carman.

9. Historical Geology.—Chiefly the geology of North America, its physical history, life development and structure; special attention given to the economic deposits of each system. Frequent local (half-day) excursions noting fossils, stratigraphy, physiography, and economic relations. Lec., T., Th., 8:30-9:30; lab., M., 2:00-5:00. Course 1 is prerequisite. Assistant Professor Carman.

Geology 9 is accepted as graduate work by agreement with the professor in charge. It may be taken as a two-hour course without laboratory or a three-hour course with laboratory.

14. Course 14 is outlined under the heading "For Teachers." Open to college students only by special agreement with the professor in charge.

For Undergraduates and Graduates

5b. Field Geology and Survey Methods.—The study and mapping of assigned areas in the vicinity of Cincinnati. Students work singly or in parties of two, and submit typewritten reports with topographic and geologic maps. *Second semester.* Hours to be arranged by agreement with each party. Credit according to number of hours elected. Assistant Professor Carman.

*7. Mineralogy.—This course embraces (1) geometrical study of crystal forms illustrated by wooden models; (2) description and classification of minerals, about 400 species being used in laboratory study; (3) determinative mineralogy and blowpipe analysis. Two lectures and one laboratory. T., Th., 10:30-12:30; F., 10:30-11:30. Dr. Bucher.

8. Introductory Paleontology.—The work of this course is mainly with fossil invertebrates, their specific features, the age of the rocks which contain them, their migrations and association in societies. Recognition at sight is emphasized. T., Th., 8:30-9:30; F., 2:00-5:00. Dr. Bucher.

12. Petrology.—This course embraces (1) the optical principles of mineralogy; (2) the microscopic study of minerals in rock sections; (3) a systematic study of rocks, their constitution, structure, origin, and classification. Two or three hours, to be announced. Course 7 is prerequisite. ——— ———.

*Course 1 is not prerequisite to Course 7, but the latter is not accepted as a graduate course for students making Geology a major, unless Course 1 or its equivalent has been taken.

13. Special Work in Geology.—Any student in this department may, by agreement with the instructors in charge, register for individual study or investigation not described in the list of courses. Such work must be regularly supervised and approved upon examination or by the preparation of a thesis. Credit according to number of hours elected.

Course 16 is outlined under the heading "For Teachers."
Course 20 is outlined under the heading "For Teachers."

For Teachers

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lec., S., 8:30-10:30; field or lab., 10:30-12:30. Professor Fenneman.

19. Historical Geology.—For teachers who have had Course 14. Lec., S., 8:30-10:30; field or lab., 10:30-12:30.
Assistant Professor Carman.

16. Advanced Physiography of the United States.—Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lec., W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

[20. Physiography of Europe.]—Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lec., W., 4:00-6:00. Dr. Bucher.
Omitted in 1916-17.

GERMAN

MAX POLL, PH.D., ... Professor of the Germanic Languages
CLAUDE M. LOTSPEICH, PH.D., ...Associate Professor of German
ELEANOR NIPPERT, A.M., ... Instructor in German
MARTIN LUDWICH, A.M., ...Instructor in German
WALTER BUCHER, PH.D., ...Instructor in Geology

For Undergraduates

1. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German.

Sec. I, T., Th., S., 8:30-9:30.
Sec. II, M., W., F., 9:30-10:30.
Sec. III, M., W., 1:00-2:00; F., 2:00-3:00.
Associate Professor Lotspeich and Miss Nippert.

Course 1 is open to students who have had no German in the high school.

2. German Prose and Poetry.—Reading at sight, grammar, composition, and dictation.

Sec. I, M., W., F., 8:30- 9:30.
Sec. II, T., Th., S., 9:30-10:30.
Sec. III, M., W., F., 10:30-11:30.

Associate Professor Lotspeich and Miss Nippert.

Course 2 is open to students who have passed in Course 1 or who have had two years of German in the high school.

Course 2 does not count towards a major in German.

20. German Scientific Prose.—Subjects in natural science. T., Th., 11:30-12:30. Dr. Bucher.

Course 20 is open to students who have passed in Course 1 or its equivalent. Course 20 does not count towards a major in German. If taken after Course 2, Course 20 will count only as a half course.

3. German Composition (Beginners' Course).—German grammar, conversation, and practice in writing German. T., Th., 10:30-11:30. Miss Nippert.

Course 3 is open to students who have passed in Course 1. Courses 2 and 3 may be advantageously taken together.

*4. Introduction to German Literature of the Eighteenth Century.—Lessing's *Emilia Galotti*, Schiller's *Jungfrau von Orleans* and *Maria Stuart*, Goethe's *Iphigenie*, *Egmont*, *Tasso* and *Goetz von Berlichingen*. Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted mainly in German.

Sec. I, M., W., F., 10:30-11:30.
Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.

Professor Poll, Miss Nippert, and Assistant.

Course 4 is open to students who have passed in Course 2. Students in this course are urged to take a composition course in addition.

21. German Composition (Intermediate Course.)—Practice in composition, conversation and in writing German. T., Th., 9:30-10:30. Course 21 is open to students who have passed in Course 2. Miss Nippert.

Courses 4 and 21 may be advantageously taken together.

14b. Advanced German Reading. — The material for study will be selected from such works as Goethe's *Dichtung und Wahrheit*, Schiller's *Geschichte des dreissigjährigen Krieges*, Lessing's *Ham-*

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*Students entering the University who have done advanced work in German may anticipate this course by passing an examination on the work as outlined above, within three weeks after matriculation.

burgische Dramaturgie, Biedermann's *Deutsche Bildungszustände in der zweiten Hälfte des Achtzehnten Jahrhunderts. Second semester*, T., Th., 11:30-12:30. Associate Professor Lotspeich.

Course 14b is open to students who either have completed or are taking Course 4 or Course 5.

[15b. Phonetics and Linguistics.] A general introductory course intended for students of all the language departments. A study of the organs of speech and the fundamental principles of phonetics, and an analysis of the speech-sounds of English, German, and French, chiefly from the point of view of the practical teaching of modern languages. An introduction to the science of language; different types of languages; the chief characteristics of the Indo-European group; principles of change in language; word-formation; semasiology, etc. This course is conducted in English. It is open to Juniors, Seniors, and Graduates, with the permission of the instructor. *Second semester*, T., Th., 11:30-12:30.

Omitted in 1916-17. Associate Professor Lotspeich.

For Undergraduates and Graduates

5. History of German Literature to the Nineteenth Century, with Special Study of the Classic Periods of the Twelfth and Eighteenth Centuries. Among other works the following are read in 1916-17: *An Anthology of German Literature*, by Calvin Thomas; the *Nibelungenlied* (translated into modern German by R. Woerner); Lessing's *Nathan*; Schiller's *Wallenstein* and *Braut von Messina*, and Goethe's *Faust*. Lectures in German, collateral reading. M., W., F., 9:30-10:30. Professor Poll and Assistant.

Course 5 is open to students who have passed in Course 4.

6. German Literature of the Nineteenth and Twentieth Centuries.—The Romantic School. The Novel. The Drama and Lyrics. Lectures, collateral reading and written reports by the class. Th., 4:00-6:00. Professor Poll.

Course 6 is open to students who have passed in Course 5.

[10. German Composition (Advanced Course.)] Advanced composition and practice in writing German. S., 9:30-11:30.

Omitted in 1916-17. Professor Poll.

30. Glimpses of German Life and Culture.—Papers and discussions in German. Advanced composition. S., 9:30-11:30.

Professor Poll.

Primarily for Graduates

[12. Interpretation of both parts of Faust and Study of the Legend.] T., 4:00-6:00. Professor Poll.
Omitted in 1916-17.

Course 12 is open to students who have passed in Course 5.

11b. German Literature from the Reformation to the Classic Period of the Eighteenth Century.—*Second semester*, T., 4:00-6:00. Professor Poll.

Course 11 is open to students who have passed in Course 5 or 6.

Of the three following courses, 7, 8, and 26, one is given each year. Students may express their preference, and upon sufficient demand, a second course will be given at hours to be arranged.

7. Middle High German.—W., 4:00-6:00. Associate Professor Lotspeich.

8. Gothic and Old High German, with Special Attention to the Development into Modern German,—W., 4:00-6:00. Associate Professor Lotspeich.

26. Old Norse.—W., 4:00-6:00. Associate Professor Lotspeich.

[9b. German Seminary.] T., 4:00-6:00. Professor Poll.
Omitted in 1916-17.

For Teachers

Courses 10 and 30, outlined above, are intended primarily for teachers.

Evening Courses

33. Elementary German.—Grammar, translation from German into English, and elementary exercises in translating into German. W., 7:30-9:30. Mr. Ludwich.

34. Intermediate German, Prose and Poetry.—Translation, sight reading, grammar, composition, dictation. Th., 7:30-9:30. Associate Professor Lotspeich.

35. Introduction to German Literature of the Eighteenth Century.—Translation and reading at sight. Practice in writing German, based on the reading. This course is conducted mainly in German. M., 7:30-9:30. Professor Poll.

GREEK

JOSEPH EDWARD HARRY, PH.D., ... Professor of Greek
ARTHUR JAMES KINSELLA, A.M., ... Instructor in Greek

For Undergraduates

1. Oratory—Epic Poetry—Philosophy.—Lysias, six orations; Herodotus, one book; *Iliad*, Books XIX-XXII.

The Lyric Poets.—Selections. Plato: *Protagoras*; *Lysis*; *Laches*; *Charmides*. Collateral reading: two orations of Lysias; two books of the *Iliad*; Plato's *Apology* and *Crito*. M., W., F., 9:30-10:30, throughout the year. Professor Harry.

A collateral course is offered by Mr. Kinsella for those students who are unable to attend at this hour.

Course 1 is open to students who have had three years of Greek in the high school.

3. The Drama.—Euripides, *Hippolytus*; Sophocles, *Oedipus Tyrannus*; Aeschylus, *Prometheus*; Aristophanes, *Ranae*. Collateral reading—Euripides: *Alcestis*, *Ion*. M., W., F., 10:30-11:30, throughout the year. Professor Harry.

Course 3 is open to students who have completed Course 1.

4. The Odyssey.—Two hours weekly; to be arranged. Mr. Kinsella.

8. The Life and the Literature of the Ancient Greeks.—Greek Life, *first semester*. The Lyric Poets, *second semester*. Th., 10:30-11:30. Professor Harry.

Students who are not acquainted with the Greek language may be admitted to Course 8.

9. Elementary Greek.—First Greek book and grammar. Xenophon. M., W., F., 8:30-9:30. (See also Course 17.) Mr. Kinsella.

Course 9 is open to students who have had no Greek in the high school.

10. The New Testament.—A course in grammar and translation. Two hours; to be arranged with the instructor. Throughout the year. Mr. Kinsella.

Course 10 alternates with Course 16.

Course 10 is open to students who have had three years of Greek in the high school.

21. Practical Exercises in Attic Greek.—F., 4:00-5:00. Professor Harry.

15. Intermediate Greek.—Completion of Xenophon. Prose Composition. Homer, I-III. M., W., 11:30-12:30; F., 1:00-2:00. Mr. Kinsella.

Prerequisite: Course 9 or two years of Greek in the high school.

[16. Hellenistic Greek.] Philo and other writers of this period. Two hours throughout the year; to be arranged with the instructor. Course 16 alternates with Course 10. Mr. Kinsella.

Omitted in 1916-17.

17. First Year Greek.—T., Th., S., 11:30-12:30. This course is offered to give those who cannot take Course 9 an opportunity to begin the study of Greek in the University. Professor Harry.

20a. Greek Mythology.—A lecture course with collateral reading. *First semester.* T., Th., 9:30-10:30. Mr. Kinsella.

20b. Greek Religion.—Cults of the various states. Lectures and collateral reading. *Second semester.* T., Th., 9:30-10:30. Mr. Kinsella.

Students who are not acquainted with the Greek language may be admitted to Courses 20a and 20b.

For Undergraduates and Graduates

13. Greek Art.—A course in the grammar and history of Greek art, including architecture. Special attention is given to the spirit and principles of plastic art, to the influence of religion and athletics, to the temples and their decorations, and to the masterpieces of the great Greek sculptors. Vase paintings, coins, gem engraving, wall paintings (1916-17). T., 10:30-11:30. Professor Harry.

This class is limited to forty students.

Primarily for Graduates

5. Rapid Reading.—Th., 3:00-4:00. Professor Harry.

6. Practical Exercises in Greek.—F., 2:00-4:00. Professor Harry.

7. Greek Seminary.—Tragedy and Comedy (1916-17). M., 3:00-5:00. Professor Harry.

Course 7 is open to graduates and to those who have completed the undergraduate courses in Greek.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

HISTORY

Merrick Whitcomb, Ph.D., ... Professor of History
Isaac Joslin Cox, Ph.D., ... Associate Professor of History
Reginald C. McGrane, Ph.D., ... Instructor in English History
Miriam Urbansky, A.B., ... Assistant in History
—— ——, ... D. A. R. Fellow in American History
Dulce Brutton, A.B., ... Assistant in Evening Classes

For Undergraduates

1. Middle Ages—Renaissance.—Reformation.—This course includes the main facts of European history from the fall of the Roman Empire to the end of the Reformation. Lectures and recitations. M., W., F., 9:30-10:30.

Professor Whitcomb, Dr. McGrane, Miss Urbansky.

3. The Revolution and Napoleon.—Beginning with the Bourbon period this course includes a study of the Ancien Régime and the French Revolution, and follows the fortunes of Napoleon to 1815. Lectures and recitations. M., W., F., 10:30-11:30.

Professor Whitcomb, Dr. McGrane, Miss Urbansky.

13. General Course in English History.—This course is introductory to the study of both European and American history. It traces the development of the English people from the earliest times to the present. Lectures and recitations. M., W., 1:00-2:00; F., 2:00-3:00. Dr. McGrane.

[40. The course traces the origin and development of English institutions from the earliest period to the Parliamentary act of 1911.] Course designed primarily for pre-legal students. T., Th., 11:30-12:30. Dr. McGrane.

Omitted in 1916-17.

29. Ancient History to 476, A. D.—This course comprises a brief survey of the development of the principal Oriental nations; and a more complete discussion of the civilizations of Greece and Rome. T., Th., 8:30-9:30. Dr. McGrane.

15. General Course in American History.—This course, while open to all, is especially recommended for those who contemplate work in the College for Teachers. The work is based largely upon a text-book, supplemented by regular reports and lectures. M., W., 11:30-12:30; F., 1:00-2:00. Associate Professor Cox.

For Undergraduates and Graduates

2. The Renaissance in Italy and Germany.—An advanced course covering the period 1300-1500. Knowledge of medieval history is a prerequisite. T., Th., 9:30-10:30. Professor Whitcomb.

25. European History since 1814.—An advanced course dealing with the problems of European history in the nineteenth century. France since 1814; Germany since 1814; the Kingdom of Italy; the Eastern Question. T., Th., 10:30-11:30. Professor Whitcomb.

Open to Seniors; to others by permission.

59. England since 1815.—A detailed study of the development of modern English politics, foreign affairs, commercial and industrial supremacy, and religious issues during the nineteenth century. T., Th., 11:30-12:30. Dr. McGrane.

Open to Seniors and Juniors; to Sophomores by permission.

[46. History of Germany.] Beginning with the early Germans, this course will follow the history of the German peoples down to Napoleon. T., Th., 11:30-11:30. Professor Whitcomb.

Omitted in 1916-17.

16. American Diplomacy.—A history of the chief diplomatic issues of the colonial and revolutionary periods of American history, with a careful survey of the leading diplomatic controversies to which the United States has been a party. The course is based on a textbook, supplemented by lectures and special reports. It may be counted in part toward a major in political science as well as in history. M., W., F., 8:30-9:30. Associate Professor Cox.

Open to Juniors and Seniors; to others by permission.

20. Spain and Spanish America.—A brief view of the development of Spain and the Spanish colonies; the subsequent development of the political and commercial relations of Latin America with Europe and the United States. Lectures and special reports. T., Th., 1:00-2:00. Associate Professor Cox.

36. Materials and Methods in Secondary History.—*First semester*, one hour, to be arranged. Associate Professor Cox.

39. Seminary in American History.—Politics and Political Leaders of the Ohio Valley. The course is devoted to an intensive study, from the original sources, of selected national political issues affecting this section, and the social and economic causes underlying them. Seniors may be admitted. S., 10:30-12:30.

Open to properly qualified teachers. Associate Professor Cox.

Evening Courses

58. History of Germany.—Beginning with the early Germans this course will follow the history of the German peoples to the period of the Napoleonic Wars, including the reorganization of Prussia by Stein and his associates. W., 7:30-9:30.

Professor Whitcomb, ————

[47. General Course in American History.] Th., 7:30-9:30. Omitted in 1916-17. Associate Professor Cox.

[48. General Course in American History (Continued).] Th., 7:30-9:30. Associate Professor Cox.

Omitted in 1916-17.

49. Latin America.—A review of the Spanish and Portuguese colonial systems, the struggle for political independence in Latin America, and the subsequent political and economic development of the chief Latin-American countries. Lectures and special reports. Th., 7:30-9:30. Associate Professor Cox.

LATIN

JOHN MILLER BURNAM, PH. D., ... Professor of Latin
WILLIAM TUNSTALL SEMPLE, PH. D., Assistant Professor of Latin

For Undergraduates

1. Selections from the Historical Literature of Rome; Livy, Sallust, and Pliny.—Informal discussion of the life and thought of the times.

Sec. I, T., Th., S., 8:30-9:30.

Sec. II, M., W., F., 9:30-10:30.

Professor Burnam and Assistant Professor Semple.

Course 1 is open to students who have had four years of Latin in the high school.

2. Selections from Ovid, Horace, and Catullus.—M., W., F., 10:30-11:30. Assistant Professor Semple.

Course 2 is open to students who have completed Course 1.

6. Prose Composition.—One hour per week throughout the year. T., 10:30-11:30. Assistant Professor Semple.

Course 6 is required of all students who choose Latin as a major. It may be taken any year after the completion of Course I.

3. Comedy.—Plautus and Terence, *first semester;* Lucretius' *De Rerum Natura, second semester.* M., 2:00-3:00. T., Th., 11:30-12:30; Assistant Professor Semple.

Course 3 is open to students who have passed in Courses 1 and 2.

5. Latin Literature.—A general survey of the life and letters of the Roman people from the earliest times until the later Empire. Th., 10:30-11:30. Assistant Professor Semple.

7. Lectures on Special Topics.—Hours and amount of credit to be arranged. Professor Burnam.

8. Latin Teaching.—Practical exercises in teaching secondary Latin. S., one hour, to be arranged. Assistant Professor Semple.

For Graduates and Undergraduates

4. Eclogues and Georgics of Virgil, *first semester*; selections from the silver Latin poets, *second semester.* Three hours, to be arranged. Professor Burnam.

Course 4 is open to students who have passed in Courses 1 and 2.

Primarily for Graduates

Hours in all cases to be arranged

9. Latin and Romance Palaeography.—Three hours.
Professor Burnam.

Course 9 must be preceded by at least four years of undergraduate work, and requires the ability to read French and German.

10. Latin Seminary.—

10a.	Cicero.	Three hours.
10b.	Virgil.	Omitted in 1916-17.
10c.	Caesar.	Omitted in 1916-17.

The seminary considers Caesar, Cicero, and Virgil, in successive years in the order mentioned. The author to be studied in 1916-17 (Course 10a) is Cicero. Professor Burnam.

12. Graduate Study.—Credit according to work elected and completed under the direction of the teaching staff of the department.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

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*MATHEMATICS

HARRIS HANCOCK, PH. D., D. SC.,.....Professor of Mathematics
STEPHEN ELMER SLOCUM, PH. D., Professor of Applied Mathematics
CHARLES NAPOLEON MOORE, PH. D., Assistant Professor of Mathematics
LOUIS BRAND, A.M.,.....Assistant Professor of Mathematics
FLORENCE CAMERON LAWLER, B. S.,....Instructor in Mathematics
JOSEPH HENRY KINDLE, A. M.,.....Instructor in Mathematics
EDWARD SMITH, M. S.,.....Instructor in Mathematics

For Undergraduates

1. Algebra, Trigonometry.—Selected portions of algebra and the elementary Theory of Equations. Wentworth, *College Algebra;* Trigonometry, Crockett, *Trigonometry.*

Sec. I, M., W., F.,	8:30- 9:30.	Miss Lawler.
Sec. II, M., W., F.,	9:30-10:30.	Miss Lawler.
Sec. III, M., W., F.,	10:30-11:30.	Miss Lawler.
Sec. IV, T., Th., S.,	9:30-10:30.	Miss Lawler.

Students who matriculate with *less than three units* in Mathematics, and who elect Mathematics, *must* take Course 1.

4. Trigonometry and Analytics.—T., Th., S., 8:30-9:30.
Miss Lawler.

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*See other courses in Mathematics and Applied Mathematics, College of Engineering.

Students who matriculate with *three or more units* in Mathematics, and who elect Mathematics, *must* take Course 3 or 4.

3. Analytical Geometry of Two and Three Dimensions. M., W., F., 9:30-10:30. Assistant Professor Moore.

Sophomores who have taken Course 1, and Freshmen, who enter *with four units* in Mathematics, may (by special permission) take Course 3.

5. Calculus. Differential and Integral.—Osborne, *Calculus;* Davis, *Calculus.*
Sec. I, M., T., Th., F., 10:30-11:30. Professor Hancock.

For Undergraduates and Graduates

15. Theory of Equations, Including Determinants.—Burnside and Panton, *Theory of Equations.* Lectures. M., W., F., 9:30-10:30. Professor Hancock.

[8a. Advanced Integral Calculus.] Byerly, *Integral Calculus.* Lectures. M., W., F., 9:30-10:30, *first semester.*
Omitted in 1916-17. Professor Hancock.

[9b. Differential Equations.] Forsyth, *Differential Equations.* Lectures. M., W., F., 9:30-10:30, *second semester.*
Omitted in 1916-17. Professor Hancock.

Primarily for Graduates

25. Elliptic Functions.—T., Th., 4:00-6:00. Professor Hancock.

26. History and Teaching of Mathematics.—W., 4:00-5:00; F., 4:00-6:00. Professor Slocum.

27. Infinite Series and Integrals and Their Applications.—Hours to be arranged. Assistant Professor Moore.

[11b. Fourier's Series and Spherical Harmonics.] *Second semester,* Th., 4:00-6:00; S., 9:30-10:30. Professor Slocum.
Omitted in 1916-17.

[10a. Theory of Errors and Method of Least Squares.]—*First semester,* M., 4:00-5:00; W., 4:00-6:00. Professor Slocum.
Omitted in 1916-17.

40. Seminary.—Credit according to number of hours elected. Hours by special arrangement. Professor Slocum.

The following courses which are given from time to time will be omitted in 1916-17 :

16a. Theoretical Mechanics.

16b. The Mathematical Theory of Elasticity.

20. Theory of Maxima and Minima Involving Several Variables. The Calculus of Variations.

30. Theory of Numbers, Part I.—Natural Numbers.

31. Theory of Numbers, Part II.—Algebraic Numbers.—Dedekind's Theory.

32. Theory of Numbers, Part III.—Kronecker's Theory.

24. Elliptic Functions, Part I.—Analysis.

36. Vector Analysis.

28. Theory of Functions.—Lectures on the Theory of Functions of a Complex Variable.

29. Theory of Functions of a Real Variable.

33. Advanced Algebra.—Part I. Lectures.

34. Advanced Algebra.—Part II.

35. Advanced Algebra.—Part III.

18a. Theory of Minimal Surfaces.

Evening Courses

40. Algebra—Trigonometry.—Selected portions of algebra and the elementary Theory of Equations. Ashton and Marsh, *College Algebra*. Trigonometry: Rothrock, *Trigonometry*. W., 7:30-9:30. Mr. Kindle.

42. Analytical Geometry and Elementary Calculus. F., 7:30-9:30. Mr. Smith.

PHILOSOPHY

Guy Allan Tawney, Ph. D.,.....Professor of Philosophy
Henry G. Hartman, Ph. D.,...Assistant Professor of Philosophy

For Undergraduates

1a. Introduction to Philosophy.—Open to students who have completed one year of University work. *First semester*, M., W., F., 10:30-11:30. Assistant Professor Hartman.

1b. Philosophical Idealism Historically and Critically Treated.—*Second semester*, M., W., F., 10:30-11:30.
Assistant Professor Hartman.

2a. Introduction to Logic.—Open to students who have completed at least one year of University work. *First semester*, M., W., F., 9:30-10:30. Professor Tawney.

For Undergraduates and Graduates

2b. Theory of Scientific Method.—*Second semester*, M., W., F., 9:30-10:30. Professor Tawney.
Prerequisite: Course 2a.

3a. History of Philosophy from the Italian Renaissance to the Time of Kant.—*First semester*, M., W., F., 8:30-9:30.
Professor Tawney.

3b. History of Modern Philosophy from the Time of Kant.—*Second semester*, M., W., F., 8:30-9:30.

[4a. History of Philosophy to the Beginning of the Christian Era.] Open to students who have completed one year of University work. *First semester*, M., W., F., 8:30-9:30.
Omitted in 1916-17.

[4b. History of the Philosophy of the Middle Ages.] Courses 4a and 4b alternate biennially with Courses 3a and 3b. *Second semester*, M., W., F., 8:30-9:30.
Prerequisite: Course 4a.
Omitted in 1916-17.

5a. Ethics.—Open to students who have completed two years of University work. *First semester.*
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Assistant Professor Hartman.

5b. Ethical Interpretations.—*Second semester.*
Sec. I, M., W., F., 10:30-11:30. Professor Tawney.
Sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Prerequisite: Course 5a. Assistant Professor Hartman.

8a. Aesthetics, the Theory of Art and the Beautiful.—*First semester*, T., Th., 9:30-10:30. Assistant Professor Hartman.

8b. Aesthetics, the Theory of Art and the Beautiful.—*Second semester*, T., Th., 9:30-10:30. Assistant Professor Hartman.
Prerequisite: Psychology 1a and 1b.

12. Thought Movements of the Nineteenth Century.—S., 8:30-9:30. Professor Tawney.

Primarily for Graduates

30. Contemporary Idealism.—Th., 1:00-3:00.
Assistant Professor Hartman.

31. The Method of Reflection.—T., 1:00-3:00.
Professor Tawney.

For Teachers

12. Thought Movements of the Nineteenth Century.—S., 8:30-9:30. Professor Tawney.

Evening Courses

[22. Logic.] Th., 4:45-6:45. Assistant Professor Hartman. Omitted in 1916-17.

23. Ethics.—M., 7:30-9:30. Professor Tawney.

24. Introduction to Philosophy.—Th., 5:00-7:00. Assistant Professor Hartman.

It should be remembered that work in the Department of Philosophy is facilitated by courses in psychology, sociology, political science, general history, economics, the history of education, aesthetics, and other allied subjects dealing with human life and the products of civilization.

PHYSICAL EDUCATION

ALFRED BRODBECK, ...Director of Physical Education
EDITH J. GREBNER, ...Instructor in Physical Education

ASSISTANT: W. G. Barnes, A.B.

Physical Training for Men.—All students are required to take five hours per week in the Department of Physical Education. It is expected that these hours will be distributed as follows: Three hours per week for all members of the Freshman class (lectures on hygiene, one hour, work in the gymnasium, two hours), and two hours per week for all members of the Sophomore class. Departures from this rule will be allowed only under exceptional conditions, for which special permission must be secured from the Dean in advance.

A physical examination is required of each student of the two lower classes upon entrance and upon completion of the required work. Appointments for the examination must be made with the Physical Director at the beginning of the first semester.

Credit: One credit will be given for each semester's work.

Gymnasium sections for men meet as follows:

Phys. Ed. 1 (Freshmen).—Sec. I, M., W., 11:30-12:30.
Sec. II, T., Th., 11:30-12:30.
Sec. III, T., Th., 4:00- 5:00.
Hygiene lecture, F., 3:00- 4:00.

Phys. Ed. 2 (Sophomores).—Sec. I, M., W., 10:30-11:30.
Sec. II, T., Th., 10:30-11:30.
Sec. III, T., Th., 4:00- 5:00.
Mr. Brodbeck.

Special Classes.—Boxing, M., 4:30; wrestling, W., 4:30; fencing, Th., 4:30.

Physical Training for Women.—The work is arranged with a view to obtaining the best hygienic, corrective, and recreative results.

A physical examination will be made at the beginning of the Freshman and at the end of the Sophomore year.

The course for Freshmen consists of three hours' attendance per week throughout the year. Two hours each week are spent in exercising in the gymnasium; the other hour is devoted to lectures on hygiene. The lectures must be attended by every member of the Freshman class, irrespective of the fact that she may be excused from the gymnasium work.

The course for Sophomores consists of two hours of exercise in the gymnasium, prescribed for all members unless excused by the Director of Physical Education or on a physician's certificate.

Credit: One credit will be given for each semester's work.

Gymnasium sections for women meet as follows:

Phys. Ed. 1 (Freshmen).—Sec. I, M., W., 1:00-2:00.
Sec. II, T., Th., 1:00-2:00.
Hygiene lecture, F., 3:00-4:00.

Phys. Ed. 2 (Sophomores).—Sec. I, M., W., 2:00-3:00.
Sec. II, T., Th., 2:00-3:00.

Voluntary Class.—F., 2:00-3:00.

PHYSICS

Louis Trenchard More, Ph. D., ... Professor of Physics
Samuel James McIntosh Allen, Ph. D., Associate Professor of Physics
Robert E. Clyde Gowdy, Ph. D., ... Instructor in Physics
Thomas Lansing Porter, Ph. D., ... Instructor in Physics
Alan T. Waterman, A.M., ... Instructor in Physics
Platt B. Evens, ... Instructor in Laboratory Arts

For Undergraduates

26a. General Physics.—Lectures and recitations on mechanics, sound, and heat, illustrated with lecture experiments. *First semester*, M., W., 11:30-12:30; F., 1:00-2:00. Professor More and Dr. Porter.

27b. General Physics.—Lectures and recitations on light, electricity, and magnetism, illustrated with lecture experiments. *Second semester*, M., W., 11:30-12:30; F., 1:00-2:00.
Professor More and Dr. Porter.

N. B.—The above courses are designed for students in the College of Liberal Arts only; they may be elected in the Freshman year. They will present the fundamental laws and phenomena of physics, and will be non-mathematical in treatment. Taken with Courses 2a and 22b, Experimental Physics, they satisfy the science requirement.

2a. Experimental Physics.—Laboratory work arranged to accompany General Physics. *First semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00- 4:00.
Sec. III, M., F., 1:00- 4:00 (for Engineers only).

22b. Experimental Physics.—Laboratory work arranged to accompany General Physics. *Second semester.*

Associate Professor Allen, Dr. Gowdy, Dr. Porter, and Assistants.

Sec. I, T., Th., 8:30-11:30.
Sec. II, T., Th., 1:00- 4:00.
Sec. III, M., W., F., 1:00- 4:00 (for Engineers only).

28a. Advanced General Physics.—Lectures and recitations on mechanics and heat. *First semester.* T., Th., 9:30-10:30.

Associate Professor Allen.

29b. Advanced General Physics.—Lectures and recitations on light, electricity, and magnetism. *Second semester.* T., Th., 9:30-10:30. Associate Professor Allen.

Prerequisites for Courses 28 and 29 are Courses 26 and 27, and Mathematics 1.

4a. Intermediate Experimental Physics.—Laboratory experiments in electricity and magnetism with instruments of precision. M., W., 1:00-4:00. Associate Professor Allen.

4b. Intermediate Experimental Physics.—Laboratory experiments in sound, heat, and light. M., W., 1:00-4:00.

Associate Professor Allen.

Courses 4a and 4b are arranged to accompany Courses 28a and 29b.

For Undergraduates and Graduates

32b. Philosophy of Science.—A course of lectures on the fundamental ideas of science. The purpose of the course is to give a survey of the most important epochs of science and of the growth of the scientific method. The problems discussed will not be limited to physics; no mathematics required. Open to all students, above the Sophomore year, who have had a course in any science. T., Th., 11:30-12:30. Professor More.

[3a. Theoretical Mechanics.] A course of lectures on the mathematical laws of mechanics. *First semester,* T., Th., S., 11:30-12:30. Omitted in 1916-17. Professor More.

[18b. Theory of Electricity and Magnetism.] A course of lectures

on the mathematical laws of electricity and magnetism. *Second semester*, T., Th., S., 10:30-11:30. Professor More.

Omitted in 1916-17.

19a. Theory of Heat.—A course of lectures on the mathematical laws of heat. *First semester*, T., Th., S., 11:30-12:30.
Professor More.

15b. Theory of Light.—A course of lectures on the mathematical laws of light. *Second semester*, T., Th., S., 10:30-11:30.
Professor More.

The above courses may be elected for a minor in Physics, the following courses for a major, in graduate work.

8. Advanced Experimental Physics.—The exact determination of some of the standard and classical experiments. Credit according to number of hours elected.
Associate Professor Allen and Professor More.

10. Seminary.—The reading and discussion of papers in physical journals. T., 4:00-6:00. Professor More.

16. Physical Manipulations.—A series of exercises in scientific shop-work. Shop-work; soldering and metal-working, screw-cutting and elementary lathe-work. Glass-work and physical processes; glass-blowing, cutting, grinding, polishing, silvering; fiber suspensions and preparations useful in the laboratory. Hours to be arranged. Without credit. Mr. Evens.

33a. Discharge of Electricity through Gases and Radioactivity.—Twice weekly, hours to be arranged. Associate Professor Allen.

For Graduates Only

7. Lectures on Theoretical Physics.—Twice weekly.
Professor More.

25a. Theoretical Mechanics.—See under Mathematics 16a.
Professor Slocum.

9. Research. Professor More and Associate Professor Allen.

For Teachers Only

11. Laboratory Methods for Teachers.—This course comprises a set of experiments designed especially for teachers. The exercises will include those which are usually given in schools, and also those of a more difficult nature which illustrate the theoretical principles. S., 8:30-11:30. Dr. Porter.

POLITICAL AND SOCIAL SCIENCE

Selden Gale Lowrie, Ph. D., ... Professor of Political Science
Clarence Oran Gardner, Ph. D., Assistant Professor of Political Science
William Hammond Parker, Ph. D., Assistant Professor of Economics and Social Science

POLITICAL SCIENCE

For Undergraduates

1. American Government.—The primary aim of this course is to prepare for the duties of citizenship and lay a foundation for the further study of political science. The nature and organization of our federal government will be studied the first semester, and state and local government will be studied the second semester. M., W., F., 10:30-11:30. Assistant Professor Gardner.

11a. Municipal Government.—An elementary course in the fundamentals of modern municipal organization and administration in Europe and the United States. Special consideration will be given to such subjects as the relation of the city to the central authorities, home rule, municipal charters, the electorate, commission government, etc. *First semester*, M., W., F., 8:30-9:30.

Assistant Professor Gardner.

8. Civics for Teachers.—Open only to those who wish to prepare themselves to be teachers. M., W., 1:00-2:00; F., 2:00-3:00.

Assistant Professor Gardner.

For Undergraduates and Graduates

2a. International Law.—A study of the principles, rules, and customs controlling the states of the civilized world in their relation to each other. *First semester*, M., W., F., 8:30-9:30.

Professor Lowrie.

Open to Juniors and Seniors and to those students taking Course 1.

2b. European Governments.—A study of the nature and organization of the leading European governments. Brief consideration will also be given to colonial institutions and the governments of the principal South American republics. *Second semester*, M., W., F., 8:30-9:30. Assistant Professor Gardner.

Open to Juniors and Seniors and to those students taking Course 1.

3a. Political Theory.—The development of political thought from the time of the Greeks to the present. Lectures, assigned readings, and reports. *First semester*, T., Th., 1:00-2:00.

Open to Juniors and Seniors. Assistant Professor Gardner.

4b. Political Parties and Elections.—This course deals primarily with those phases of political activity in which the voter participates directly through either individual or group action. Subjects treated include the development of political parties in the United States, party machinery and methods, party programs, nomination and election procedure, direct legislation, etc. *Second semester*, T., Th., 1:00-2:00. Assistant Professor Gardner.

6. Public Finance and Taxation.—An introductory course in the principles of taxation and the methods of levying and collecting taxes. A study will also be made of modern budget systems. T., Th., 8:30-9:30. Professor Lowrie.

Open to Juniors and Seniors and to those students who have taken Economics 1.

11b. Municipal Functions.—A study of the activities of the modern city. Special attention will be given the problems involved in the contemporary development of Cincinnati. This course will be given in coöperation with the Municipal Reference Bureau. *Second semester*, M., W., F., 8:30-9:30. Professor Lowrie.

16. American Diplomacy.—(See History 16) Students taking this course for the year will be allowed to count three credits toward a major in Political Science. Students should register for History 16. M., W., F., 8:30-9:30. Associate Professor Cox.

[17. Constitutional Law.] A study of American constitutions, and their development through judicial interpretation. T., Th., 8:30-9:30. Assistant Professor Gardner.

Open to those who have had Course 1.

Omitted in 1916-17.

[19b. Public Utilities.] A study of public regulation and public and private ownership of municipal public utilities in America and in foreign countries. The subject considered will include the constitutional and judicial limitations to be observed in the regulation of utilities, reasonable rates and service, and the political and social aspects of the question. *Second semester*, T., Th., 8:30-9:30.
Omitted in 1916-17. Assistant Professor Gardner.

Primarily for Graduates

25. Seminar in Municipal Government.—M., 4:00-6:00.
Professor Lowrie.

Open to those who have had Courses 11a and 11b, and to others by permission.

26. Research in Municipal Government.—Hours to be arranged.
Professor Lowrie.

Open to graduate students who have taken Courses 11a and 11b and to others by permission.

Evening Courses

30. Municipal Government.—A study of the organization, powers, and functions of American municipalities, together with a brief survey of the governments of modern English, French, and Prussian cities. Throughout the course special emphasis will be

placed upon the operation of city government, with particular reference to contemporary government in Cincinnati. M., 7:30-9:30.
Assistant Professor Gardner.

[31. American Government.] The scope of this course is practically the same as that of Course 1 as described above. M., 7:30-9:30. Assistant Professor Gardner.

Omitted in 1916-17.

[32. Public Finance and Taxation.] An introductory course in the principles of taxation and the methods of levying and collecting taxes. Also a study of modern budget systems. T., 7:30-9:30.

Prerequisite: Economics 1. Professor Lowrie.

Omitted in 1916-17.

SOCIAL SCIENCE

For Undergraduates

5. Elementary Sociology.—An introductory course designed to present a working theory of the nature of society, the prevailing types of social organizations, and the larger problems connected therewith. The nature of sociology, facts of social evolution, social control, social organization, social ideals, social pathology, methods of social investigation, and the history of sociology. T., Th., 9:30-10:30. Assistant Professor Parker.

For Undergraduates and Graduates

7. Modern Social Theories.—Lectures and assigned readings on the social theories of Comte, Mill, Spencer, Gumplowicz, Tarde, Mackenzie, Ward, Giddings, Small, and others. Particular attention is given to the development of social theory and to the consequences of the theories of these writers in the field of practical social reform. M., W., 10:30-11:30. Assistant Professor Parker.

15. Modern Philanthropy.—A study of the problems of charity. Treatment of the pauper, feeble-minded, insane, and of dependent children. Suggestions regarding the best methods of dealing with these classes. M., W., 9:30-10:30. Assistant Professor Parker.

20. Criminals and Delinquents.—Problems of Crime. Criminal anthropology, physical and psychical. Criminal diagnostics, definition of crime, detection and identification of criminals, state control of criminals. Criminal therapeutics, penalties, punishment and reformation of criminals, jails, prisons, and reformatories. Criminal hygienics, police prevention of crime, presumptive criminals. Principles of scientific penology, lynch-law, and the trend of crime in modern times. T., Th., 10:30-11:30. Assistant Professor Parker.

21. Social Problems.—A study of current social problems and the influence of certain factors in social evolution. The function,

origin, forms, development, and problems of the family. Problems of population, immigration, the negro, the city, poverty and pauperism, education, and social progress. M., W., 11:30-12:30.

Assistant Professor Parker.

22. Seminary.—Opportunity is here given for the detailed study of special problems in social science. Credit according to number of hours elected; minimum, two hours; maximum, four hours.

Assistant Professor Parker.

Evening Course

5. Elementary Sociology.—A fundamental course dealing with the origin, composition, evolution, and functions of society. Special attention will be given to the study of the existing social organization and certain of the larger problems connected therewith. This course is designed to be introductory to all advanced work in the field of Social Science. M., 7:30-9:30. Assistant Professor Parker.

PSYCHOLOGY

BURTIS BURR BREESE, PH. D., ... Professor of Psychology
ERNEST L. TALBERT, PH. D., ... Instructor in Psychology
SCHACHNE ISAACS, A. M., ... Instructor in Psychology

For Undergraduates

1a. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. *First semester*, M., W., 11:30-12:30; F., 1:00-2:00. Professor Breese.

1b. A continuation of 1a.—*Second semester*, M., W., F., 11:30-12:30. Professor Breese.

Courses 1a and 1b are open only to candidates for the A. B. degree. For prerequisite courses in Psychology for the B. S. degree, see Announcement of the College of Teachers.

For Undergraduates and Graduates

2a. Experimental Psychology.—Laboratory course. *First semester*, M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

2b. Experimental Psychology.—A continuation of 2a. *Second semester*, M., W., F., 2:00-4:30. Professor Breese and Mr. Isaacs.

9. Mental and Physical Tests.—Laboratory work with collateral reading. Two credits per semester.* T., 3:30-5:30.

Professor Breese and Mr. Isaacs.

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*In connection with this course, the department maintains a psychological clinic for school children on Tuesday mornings from 9:00 to 12:30. Dr. William Ravine, neurologist, representing the Board of Health, and Miss Emma Kohnky, principal of the Special School, assist in the examination of the children sent to the clinic. Students in Psychology 9 may by special arrangement observe the work of the clinic.

Primarily for Graduates

3. Research.—Special investigation in the psychological laboratory. Hours to be arranged. Professor Breese.

4. Seminar.—A critical study of the most important problems in psychology. Reports and discussions. Th., 3:00-5:00. Professor Breese.

20. Social Psychology.—A study of mental processes treated from the standpoint of their social background with special reference to problems of the school. S., 9:30-11:30. Dr. Talbert.

Evening Courses

30. Introductory Psychology.—An analytical study of mental phenomena, with special attention to accurate observation and description. A general account of the subject matter of psychology. T., 7:30-9:30. Professor Breese.

31. Business Psychology.—A course in the applications of psychology to business enterprises such as those of advertising and selling, industrial management, personal efficiency, and vocational guidance. Th., 7:30-9:30. Mr. Isaacs.

32. Social Psychology.—A study of those phases of mental development which are due to personal interaction. W., 7:30-9:30. Dr. Talbert.

ROMANCE LANGUAGES

PHILLIP OGDEN, PH. D., ... Professor of Romance Languages
RALPH EMERSON BASSETT, A. M., Assistant Professor of Romance Languages
WILLARD A. KINNE, A. B., ... Instructor in French and Spanish
—— ——, ... Instructor in French and Italian

FRENCH

For Undergraduates

1. Elementary French.—Bruno, *Le Tour de la France;* Aldrich and Foster, *Elementary French;* Enault, *Le Chien du Capitaine;* Coppée, *On rend l'argent.* Composition.

Sec. I, M., W., 11:30-12:30; F., 1:00-2:00. ————.
Sec. II, T., Th., S., 8:30-9:30. Mr. Kinne.

Course 1 is open to students who have had no preparation in French.

2. Intermediate French.—*First semester,* Fraser and Squair's *French Grammar,* Part II; François, *French Prose Composition;*

dictation and modern texts. *Second semester*, nineteenth century prose writers, etc. Dictation and composition.

Sec. I, M., W., F., 9:30-10:30. ————.
Sec. II, T., Th., S., 9:30-10:30. Mr. Kinne.
Sec. III, M., W., F., 9:30-10:30. Professor Ogden.

Course 2 is open to students who have taken Course 1 or who have had two years of French in the high school.

11. French Literature in the Nineteenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Daudet; Hugo; Zola; Loti. M., W., F., 10:30-11:30. ————.

Course 11 is open to students who have passed in Course 2.

3. French Composition.—Review of the more difficult points in French Grammar and Syntax. Dictation. Reproduction of narrative and descriptive passages read by the instructor from French authors. Conversation. Original composition in French. T., Th., 11:30-12:30. Professor Ogden.

With the permission of the instructor.

Course 3 is open to students who have taken Course 2.

For Undergraduates and Graduates

4. French Drama in the Seventeenth Century.—A study of the principal authors, supplemented by lectures and collateral reading on the life and literature of the time. Corneille, Racine, Molière. T., Th., 9:30-10:30. Professor Ogden.

Course 4 is open to students who have passed in Course 11.

5. French Drama in the Nineteenth Century.—Rapid reading of modern plays. W., 1:00-2:00; F., 2:00-3:00. ————.

10. Old French Readings.—Constans, *Chrestomathie de l'Ancien Français*. Lectures on historical French grammar. Two credits. Hours to be arranged. ————.

Course 10 is open to students who have passed in Course 4 or its equivalent.

24. The Prose Writers of the Nineteenth Century.—T., 4:00-6:00. Professor Ogden.

Course 24 is open to students who have passed in Course 4 or Course 11.

26. The French Novel in the Nineteenth Century.—Lectures; outside reading; conversation in French. T., Th., 8:30-9:30. Professor Ogden.

15. French Conversation.—M., W., 11:30-12:30; F., 1:00-2:00. Two credits. Professor Ogden.

For Teachers

30. Intermediate French.—Grammar, composition, conversation. One credit per semester for A. B. S., 10:30-11:30. ————.

24. Course 24, outlined above, is open to teachers, by permission, as well as to regular students.

Teachers who are pursuing graduate studies and are qualified to do advanced work in the Romance languages may elect courses from the above upon advice from the head of the department.

Evening Courses

33. Elementary French.—Pronunciation, grammar, reading. T., 7:30-9:30. Mr. ————.

35. Intermediate French.—Advanced grammar and modern texts. Conversation and dictation. F., 7:30-9:30.

Professor Ogden.

SPANISH

For Undergraduates

6. Elementary Spanish.—Pronunciation, grammar, composition, conversational drill. Text-books: Bassett, *Handbook of Spanish Pronunciation* and *Spanish Grammar* (Part A); Hills, *Spanish Tales.*

Sec. I, M., W., F., 9:30-10:30.

Sec. II, M., W., 11:30-12:30; F., 1:00-2:00.

Sec. III, M., W., 11:30-12:30; F., 1:00-2:00.

Assistant Professor Bassett and Mr. Kinne.

Course 6 is open to students who have had no Spanish in the high school.

18. Spanish Composition.—Systematic practice in speaking and writing. Review of syntax. Business forms. Bassett, *Spanish Grammar* (Part C); Román y Salamero, *El castellano actual;* Harrison, *Spanish Correspondence.* T., Th., 1:00-2:00.

Assistant Professor Bassett.

9. Intermediate Spanish.—Selected texts since 1850. Ibáñez, *La Barraca;* Pereda, *Pedro Sánchez;* Hartzenbusch, *La coja y el encogido;* Bassett, *Spanish Grammar* (Part B). M., W., 1:00-2:00; F., 2:00-3:00. Assistant Professor Bassett.

Courses 18 and 9 must be preceded by Course 6 or by two years of Spanish in the high school.

14. The Nineteenth Century.—Representative works from leading Spanish authors of the past hundred years. Alarcón, Becquer, Fernán Caballero, Larra, Pérez Galdós, Zorrilla, etc. M., W., 2:00-3:00; F., 3:00-4:00. Assistant Professor Bassett.

Course 14 must be preceded by Course 9.

For Undergraduates and Graduates

8. Spanish Literature in the Sixteenth and Seventeenth Centuries.—Cervantes, *Don Quijote* (Part I); selected plays of Lope de Vega and Calderón. History of Spanish literature from the age of Juan II to the Bourbons. Th., 3:00-5:00.

Course 8 alternates with Course 22. Assistant Professor Bassett.

[22. The Picaroon Novel.] Cervantes, *Novelas ejemplares* (selections); *Lazarillo de Tormes;* Alemán, *Guzmán de Alfarache* (Part 1); Quevedo, *Vida del Buscón*; Espinel, *Marcos de Obregon.* Th., 3:00-5:00. Assistant Professor Bassett.

Course 22 alternates with Course 8.

Omitted in 1916-17.

Primarily for Graduates

23. Early Spanish.—Phonology and Inflections. *El Poema del Cid* and other early monuments of Spanish. History of Spanish literature to Juan II. Two credits. Hours to be arranged.

Assistant Professor Bassett.

Evening Courses

31. Elementary Spanish.—Pronunciation, grammar, oral practice, and introductory reading. F., 7:30-9:30. Mr. ————.

32. Intermediate Spanish.—Grammar review and written exercises, selected prose texts, business and letter forms, practice in speaking. T., 7:30-9:30. Mr. ————.

34. Advanced Spanish. — Special exercises in grammar and composition. Reading of modern prose. W., 7:30-9:30.

Mr. ————.

ITALIAN

For Undergraduates

7. Elementary Italian.—Grandgent, *Italian Grammar;* Bergen and Weston, *An Italian Reader;* Serao, *All' Erta, Sentinella;* Testa, *L'oro e l'orpello;* Giacosa, *Come le foglie.* M., W., 11:30-12:30; F., 1:00-2:00. Mr. ————.

For Undergraduates and Graduates

16. Italian Prose in the Nineteenth Century.—Fogazzaro, Amicis, D'Annunzio, Verga. Two hours, to be arranged. Mr. ————.

Attention is called to German 15b, General Course in Phonetics and Linguistics.

ZOOLOGY

HARRY LEWIS WIEMAN, PH. D., ... Associate Professor of Zoology
CORA MAY BOX, A.M., ... Instructor in Zoology
JOSEPH CLARK STEPHENSON, B.S., ... Instructor in Zoology
ASSISTANT: Annette F. Braun, Ph. D.

In the advanced courses training in physics and chemistry, as well as ability to read French and German, is expected. Special facilities are afforded students pursuing courses of research.

Students who desire to be recommended as teachers of zoology in secondary schools must complete as a minimum, Courses 1, 2, 6b, 13a, 14a, 15a, 16a, 17b, 18b, 19b, and 20b. It is very desirable that they also do at least one year of graduate work.

1. Animal Biology.—An introductory course in zoology along broad lines dealing with topics of a general biological nature, such as animal activities and adaptations, protoplasm, development, evolution, and classification. Lectures and quizzes. This course must be accompanied by Course 2. M., W., F., 9:30-10:30.

Associate Professor Wieman.

2. Animal Biology, Laboratory.—Consisting of practical laboratory and field work to accompany Course 1. Animals selected as types to illustrate general principles are studied and compared. Careful notes and drawings are required.

Sec. I, M., W., 1:00- 4:00.
Sec. II, T., Th., 1:00- 4:00.
Sec. III, T., Th., 8:30-11:30.

Mr. Stephenson, Miss Box, and Dr. Braun.

5. Evolution and Heredity.—A study of the historical development of modern theories of evolution and heredity, and a consideration of current literature bearing upon the subject. Lectures, recitations, and collateral reading. T., Th., 11:30-12:30.

Prerequisite: Courses 1 and 2. Associate Professor Wieman.

13a. Elementary Physiology.—A course for college students dealing with a study of the fundamental physiological activities of irritability, conductivity, and contractility, and of the processes of digestion, absorption, circulation, and metabolism. Lectures and quizzes. This course must be accompanied by Course 14a. *First semester*, T., Th., 1:00-2:00. Associate Professor Wieman.

Prerequisite: A five-hour course pursued for one year in any one of the following fields: Zoology, Chemistry, Physics, or Botany; i. e., Zoology 1 and 2; or Chemistry 1a, 2a, 3b, and 4b; or Physics, 26a, 2a, 27b, and 22b; or Botany 1a, 2a, 3b, and 4b.

14a. Elementary Physiology, Laboratory.—Experimental laboratory work designed to accompany Course 13b. *First semester*, T., Th., 2:00-5:00. Mr. Stephenson.

19b. Embryology of Vertebrates.—The work consists of lectures and demonstrations dealing with the history of the germ cells, cleavage of the ovum, embryo formation, and the development of the principal

organs of the body. This course must be accompanied by Course 20b. *Second semester*, T., Th., 1:00-2:00. Associate Professor Wieman.

Prerequisite: Courses 1 and 2, or 13a and 14a.

20b. Embryology of Vertebrates, Laboratory.—Laboratory work to accompany Course 19a. The work is based largely on the chick and pig. *Second semester*, T., Th., 2:00-5:00. Mr. Stephenson.

For Undergraduates and Graduates

[15a. Invertebrate Morphology.] Lectures and recitations on the morphology of invertebrates. This course must be accompanied by Course 16a. *First semester*, M., W., 1:00-2:00 Miss Box.

Prerequisite: Courses 1 and 2.

Omitted in 1916-17.

[16a. Invertebrate Morphology, Laboratory.] Study and dissection of selected forms to accompany Course 15a. *First semester*, M., W., 2:00-5:00. Miss Box.

Omitted in 1916-17.

[17b. Comparative Anatomy of Vertebrates.] Lectures on the anatomy, classification, habits, and distribution of vertebrates. The anatomy is studied in a comparative way, with special reference to the evolution of the various organs. This course must be accompanied by Course 18b. *Second semester*, T., Th., 1:00-2:00.

Prerequisite: Courses 19a and 20a. Mr. Stephenson.

Omitted in 1916-17.

[18b. Comparative Anatomy of Vertebrates, Laboratory.] The work consists in the careful dissection and study of selected forms to accompany Course 17b. *Second semester*, T., Th., 2:00-5:00.

Omitted in 1916-17. Mr. Stephenson.

10a. Microscopical Technique.—The course includes the preparation and use of standard fixing and staining agents, and drill in the manipulative processes incident to general microscopy and cytology. Two or three credits. *First semester*, M., W., 1:00-4:00; F., 2:00-5:00. Associate Professor Wieman.

Prerequisite: Courses 1 and 2, 19b and 20b.

10b. Cytology.—A laboratory course intended to serve as an introduction to cytology and the general field of cellular biology. Two or three credits. *Second semester*, M., W., 1:00-4:00; F., 2:00-5:00. Associate Professor Wieman.

Prerequisite: Course 10a.

Primarily for Graduates

31. Research.—Credit according to number of hours elected. Associate Professor Wieman.

Evening Course

50. Principles of Animal Biology.—A lecture and laboratory course. The lectures deal with general biological topics, such as animal morphology, physiology, adaptation, heredity, and evolution. In the laboratory certain animals selected as types are dissected and compared. Lec., M., 7:30-9:30; lab., Th., 7:30-9:30.

Mr. Stephenson.

For Teachers

7a. General Principles.—A course dealing with methods and materials in teaching Zoology. Lectures, laboratory, and field trips. Two credits. *First semester*, S., 8:30-12:30.

Associate Professor Wieman and Miss Box.

6b. Insect Biology.—A course dealing with the development, structure, and economic relationship of insects. Lectures, laboratory, and field trips. Two credits. *Second semester*, S., 8:30-12:30.

Prerequisite: Courses 1 and 2, or Course 7a. Dr. Braun.

SUMMER PREMEDICAL COURSES

The best medical colleges now require, in addition to a complete four-year high school course, two years of college training, including general, qualitative, and organic chemistry, a year's work in physics and zoology each, and at least one modern language. As many colleges have not yet established these courses, or have not the laboratory facilities for giving the requisite practice, the preparation of many students applying for admission to our Medical College is incomplete.

The University of Cincinnati will, accordingly, offer courses in the summer of 1916 in physics, in analytical chemistry, in organic chemistry, and in zoology. These courses will begin on June 5 and continue until August 12, a term of ten weeks. They will be open to students whose credentials, filed with the Director of Admissions, show that they have completed the high school course. Those taking chemistry must have had one year of general chemistry at college. Special students, not candidates for a degree, will also be admitted, provided they show satisfactory preparation for the particular course to be taken. No student will be allowed to take more than one full course or two half courses. A full course consists of one lecture and one laboratory period six days per week, and a half course of one lecture and one laboratory period three days per week.

Students completing these courses in a satisfactory manner will receive credits for admission to the College of Medicine. Furthermore, the credits granted in the premedical summer courses will

partially fulfill the requirements for the combined B. S. and M. D. degrees as follows: analytical chemistry, 4 credits; organic chemistry, 4 credits; physics, 8 credits; zoology, 8 credits. Credit for these courses will not count towards the A. B. degree.

CHEMISTRY

Analytical Chemistry.—A course in qualitative and quantitative analysis, including part of the work offered in Courses 5a, 6, and 7, as outlined in the announcement.

It will illustrate the principles and practices of qualitative analysis, and include an introduction to gravimetric and volumetric analysis. Frequent conferences will be held, at which analytical methods and calculations will be discussed, and the student's reports examined. Lec., T., Th., S., 8:00-9:00; lab., T., Th., S., 9:00-12:00.
Associate Professor Fry.

Organic Chemistry.—The lectures will cover the chief classes of organic compounds, and will be arranged to meet the needs of those entering on the study of medicine or biology. This course is a prerequisite to the study of bio-chemistry. It will also be found useful to physicians desiring to continue their studies either in bio-chemistry or physiology. M., W., F., 8:00-9:00; lab., M., W., F., 9:00-12:00. Associate Professor Fry.

PHYSICS

The course in physics will comprise, as far as possible, the regular courses of the department, numbered 26, 27, 2, and 22. The course is intended for students preparing to enter the Medical College, and its completion will satisfy the physics requirement for entrance to that College. Lec., M., T., W., Th., F., S., 8:00-9:00; lab., M., T., W., Th., F., S., 9:00-12:00. Drs. Gowdy and Porter.

ZOOLOGY

The course in zoology will correspond to the regular courses in the announcement numbered 1 and 2. The course will be specially adapted to the needs of students intending to study medicine. Lec., M., T., W., Th., F., S., 8:00-9:00; lab., M., T., W., Th., F., S., 9:00-12:00. Mr. Stephenson.

SCIENTIFIC GERMAN

The aim of this course is to acquaint the student with technical terms and with scientific forms of expression, and to enable him to read with profit the scientific literature of Germany. M., T., W., Th., F., 1:00-3:00. Mr. Ludwich.

Prerequisite: Two years high school German or German 1.

SIX-YEAR COMBINED COLLEGIATE AND MEDICAL COURSE

(Leads to the degrees B.S., M.D.)

The entrance requirements to this course will be those of the College of Liberal Arts of the University of Cincinnati. The B.S. degree will be granted at the end of the second medical year upon the joint recommendation of the faculties of the Colleges of Liberal Arts and Medicine, and the M.D. degree at the end of the sixth year. Every candidate for the B.S. degree must obtain 62 credits in the College of Liberal Arts, but no student may count toward these 62 credits more than 6 credit hours of work marked "D," or "poor," in any one semester. This restriction, however, shall not operate to prevent his counting courses so marked toward the completion of his "prescribed" work. Any premedical student who receives "D," or "poor," in more than six hours of work in any one semester must take an equal additional number of hours in an elective approved by the Dean of Liberal Arts, and pass in such electives with a grade of "C" or over, in order to be eligible for the degree of B.S. This rule became operative for premedical students with the first semester of the academic year 1914-15.

The first year of the course will consist of the following courses, which are described in the Announcement of the College of Liberal Arts under the corresponding numbers. *It should be noted that five hours of credit for a laboratory course includes three lecture hours and two laboratory periods of three hours each.*

First Year

Chemistry—5 *hours*:	First semester, Courses 1 and 2; second semester, Courses 3 and 4.
Zoology—5 *hours*:	Courses 1 and 2. In addition to this, students are recommended to take a summer course in biology at the Marine Biological Laboratory, Woods Hole, Mass.
English—3 *hours*:	Course 1.

German—3 *hours*, Course 1; or French—3 *hours*, Course 1.

Physical Education—1 *hour*.

The one-year college course in German is equivalent to two years in the high school, and in addition to this, as will be seen, there will be required, in the second year, a course in Scientific German, aimed to give the student a reading knowledge of German. Students who present on entrance an equivalent of German 1, and

a reading knowledge of German, are required to take French 1 in their first year, and may substitute an elective for Scientific German in the second year; or those who present only the equivalent of German 1 will be obliged to take the Scientific German of the second year schedule in their first year. In this case French may be taken in the second year in place of German.

SECOND YEAR

Chemistry—5 *hours*: First semester, Courses 5 and 6 which have been formed by abbreviating and combining courses formerly described as 5, 6, and 7. Second semester, organic chemistry, Courses 8 and 9.

Physics—5 *hours*: Courses 26, 27, 2, and 22.

Embryology—4 *hours*: Second semester, Zoology 19b, and 20b.

Scientific German—2 *hours* (see paragraph on French and German under "First Year").

Elective—3 *hours or more first semester.*

The third, fourth, fifth, and sixth years of this combined course are the regular years of the Medical College.

COMBINED ACADEMIC AND COMMERCE COURSE

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE

The Colleges of Liberal Arts and of Commerce have established a course which will enable students to obtain the Degree of Bachelor of Science upon the completion of four years' work. (Students taking all of their academic work in the evening session of the College of Liberal Arts can complete the course in five years.)

The *entrance requirements* to this course are those of the College of Liberal Arts of the University of Cincinnati.

The *college requirements* for this degree consist of 60 credits in the College of Liberal Arts and 60 credits in the College of Commerce, as follows:

In the College of Liberal Arts

The 60 credits in the College of Liberal Arts shall include at least:

First year

4 credits in English Composition
4 " " Economics
4 " " Mathematics
4 " " Economic History
or
4 " " Commercial Geography

Second year

2	credits	in	Railroads
2	"	"	Money and Banking
4	"	"	Statistics
4	"	"	Business Psychology
4	"	"	Commercial Geography
			or
4	"	"	Economic History

Economic History and Commercial Geography are given in the evening classes in alternate years; both are required.

In addition to the above subjects, the student must complete at least eight credit hours in Public Speaking, Ethics, German, French or Spanish. The remaining 20 credits in the College of Liberal Arts are elective.

No student may count towards these 60 credits more than 24 credits marked "D" or "poor", nor more than 6 credits marked "D" or "poor" in any one semester. This restriction, however, shall not operate to prevent his counting courses so marked toward the completion of his "prescribed" work. Any student who receives "D" or "poor" in more than six hours of work in any one semester must take an equal additional number of hours in an elective approved by the Dean of Liberal Arts, and pass in such electives with a grade of "C" or over, in order to be eligible for the degree of B. S.

In the College of Commerce

Of the 60 credits in the College of Commerce, 40 shall be for the courses of the first two years as described in the Announcement of the College of Commerce, and 20 for the supervised study of business practice as described in the Announcement under "Business Practice".

For further information, address the Dean of the College of Liberal Arts or the Dean of the College of Commerce.

*DRAWING, MODELING, AND CARVING

By an arrangement with the Art Academy of Cincinnati (originally established as the McMicken School of Design in 1869, and a department of the University of Cincinnati from 1871 to 1884, when it was transferred to the Cincinnati Museum Association), students of the University may elect courses in drawing, modeling, and carving at the Art Academy in 1916-17, and, upon presentation of the proper certificate from the Director of the School, may receive credit in the Registrar's office for such courses as part of the total number of "credits" required for the degree of Bachelor of Arts. On the payment of a fee of twenty-five dollars at the office of the Art Academy, the student is admitted to the several day classes (drawing, modeling, carving, and design). For the night classes the fee is five dollars. In the summer term of ten weeks no instruction is given at night. The winter term extends from September 26, 1916, to May 25, 1917, the summer term from the middle of June to the end of August.

The following courses of instruction are offered:

1. Free-hand Drawing.—From objects and casts. Day classes, M., W., F., 8:45-12:45, or M., T., W., Th., F., 1:00-4:00, and S., 8:45-12:45. Night classes, T., Th., F., 7:15-9:15.

Miss Miller, Miss Lord, Miss Wilson, Miss Hoover, and Mr. Reisz.

Color work in oils, water colors, or pastels is also taught in the day classes, but not at night.

2. Drawing and Painting from Life.—Figure or head. Day classes, M., T., W., Th., F., S., 8:45-12:45, and M., T., W., Th., F., 1:30-4:30. Night classes, M., T., W., Th., F., 7:15-9:15.

Mr. Duveneck, Mr. Meakin, Mr. Wessel, and Mr. Hopkins.

Artistic Anatomy is a part of this course. The night classes draw the head or figure from life.

3. Illustration.—M., T., W., Th., F., 1:30-4:30. Mr. Eschenbach.

4. Modeling.—From casts. Day classes, T., Th., S., 8:45-12:45. Night classes, M., W., 7:15-9:15. Mr. Barnhorn.

5. Modeling. Advanced Course.—From life. Day classes, M., T., W., Th., F., S., 8:45-12:45. Night classes, M., T., W., Th., F., 7:15-9:15. Mr. Barnhorn.

6. Wood Carving.—M., W , F., 12:30-4:30, and S., 8:45-12:45. Mr. Fry.

7. Decorative Design.—The principles of design, preparation of decorative motives, and their application to metals, enamels, leather, book binding, porcelain, etc. T., W., Th., F., 1:30-4:30. Miss Riis.

From the courses above offered a student may elect not more than six hours in any one semester. Not more than twelve hours of work in the Art Academy will be credited for the degree of Bachelor of Arts.

*For the teachers' training course in art, see Announcement of the College for Teachers.

COLLEGE FOR TEACHERS

The College for Teachers is organized under the joint management of the Board of Directors of the University and the Board of Education of the city of Cincinnati.

The general oversight of the College is intrusted to a Joint Committee consisting of the President of the University, a member of the Board of Directors, the Superintendent of Schools, and a member of the Board of Education.

The faculty of the College consists of the President of the University, the Superintendent of Schools, Professors, Assistant Professors, and Instructors in Education, and members of other faculties of the University giving courses which are expressly arranged to meet the requirements of the College.

The staff of instruction consists of the members of the faculty, persons belonging to other departments of the University and assigned by the President, persons holding positions in the public schools and assigned by the Superintendent, and persons belonging to the staffs of affiliated schools.

JOINT COMMITTEE

CHARLES WILLIAM DABNEY, PH.D., LL.D., President of the University

ARTHUR R. MORGAN, . . Member of the Board of Directors of the University

RANDALL JUDSON CONDON, A.M., LL.D., Superintendent of Cincinnati Schools

SAMUEL ACH, ... Member of the Board of Education

FACULTY AND STAFF OF INSTRUCTION

CHARLES WILLIAM DABNEY, PH.D., LL.D., President of the University

RANDALL JUDSON CONDON, A.M., LL.D., ... Superintendent of Cincinnati Schools

WILLIAM PAXTON BURRIS, A.M., L.H.D., Professor of the History and Principles of Education, and Dean of the College for Teachers

JOHN WILLIAM HALL, A.M., ... Professor of Elementary Education

HENRY SKINNER WEST, PH.D., Professor of Secondary Education

BURTIS BURR BREESE, PH.D., ... Professor of Psychology

NEVIN M. FENNEMAN, PH.D., Professor of Geology and Geography

GUY ALLAN TAWNEY, PH.D., ... Professor of Philosophy

HARRIS MILLER BENEDICT, PH.D., ... Professor of Botany

ANN GILCHRIST STRONG, B.S., ... Professor of Household Arts

ISAAC JOSLIN COX, PH.D., ... Associate Professor of History

CYRUS DE WITT MEAD, PH.D., Assistant Professor of Elementary Education

Frank K. Sechrist, Ph.D.,....Assistant Professor of Education
J. Ernest Carman, Ph.D.,..... Assistant Professor of Geology
Henry Gottlieb Hartman, Ph.D., Assistant Professor of Philosophy
Bertha K. Young, A.M.,.....Assistant Professor of English
William Tunstall Semple, Ph.D., Assistant Professor of Latin
Eleanor Toaz,....,..... Assistant Professor of Household Arts
Clarence Oran Gardner, Ph.D., Assistant Professor of Political Science
Abbie Louise Day, B.S., B.Di., Instructor in Elementary Education
Frances Jenkins, B.S.,.....Instructor in Elementary Education
Walter Bucher, Ph.D.,.....Instructor in Geology and Geography
Schachne Isaacs, A.M.,.....Instructor in Psychology

Courses in the teaching of special subjects are given by the following persons belonging to the staff of the Cincinnati public schools:

Anna Elizabeth Logan, A.M., Assistant Superintendent of Schools
Walter H. Aiken, ... Director, Music Department
William H. Vogel, ... Director, Art Department
Carl Ziegler, M.D., ...Director, Physical Education Department
A. H. Steadman, ... Director, Penmanship Department
H. H. Fick, Ph.D.,..... Director, German Department
Julia S. Bothwell, ... Director, Kindergarten Department
Roland W. Guss, A.M., ..Director, School Gardening Department
J. R. Garbutt, B.S.C., ... Head of Commercial Department
Grace Anna Fry, ...Kindergarten
Mary Elizabeth Hyde, ...Art
William P. Teal, ...Art
Virginia Alexander, ...Art
Emma Kohnky, A.M., Principal, Special School No. 3 for Mentally Defective Children

Technical instruction and training in kindergarten courses are given by the following members of the staff of the Cincinnati Kindergarten Training School:

Lillian H. Stone, ...Principal
John Jerome Thompson, ...Art
Mrs. W. E. Lewis, ...Physical Training
Marie Curtis Rains, ...Instructor
Frances A. Le Voy .....Instructor
Josephine Simrall, ...Instructor

At the Art Academy of Cincinnati:

Elizabeth Kellogg, ... History of Art

GENERAL REGULATIONS

In harmony with action taken on April 10, 1913, the faculties of the College for Teachers and of the McMicken College of Liberal

Arts unanimously concurring, the University undertakes the academic and professional preparation of teachers in accordance with the following regulations. The conditions governing admission, graduation, prerequisite or parallel studies, elective studies, privileges, etc., vary with the different programs outlined below, and are definitely indicated in connection therewith in each case:

I. Four-year curricula are offered to prospective teachers in elementary schools, leading to the degree of Bachelor of Science, conferred upon recommendation of the faculty of the College for Teachers.

During the first two years, students matriculated in such curricula are registered in, and are under the jurisdiction of, the McMicken College of Liberal Arts, subject to the limitations stated below. During the last two years, such students are registered in, and are under the jurisdiction of, the College for Teachers.

The standard of admission to such four-year curricula is the same as that of admission to the McMicken College of Liberal Arts.

The courses taken during the first two-year period as prerequisite to programs in the College for Teachers are prescribed by the faculty of this college, after conference with the faculty of the McMicken College of Liberal Arts.

The courses which must be included in the second two-year period are determined by the faculty of the College for Teachers.

Students from other institutions who have met college entrance requirements, who are candidates for the above degree, and who offer at least two years of work, academic or professional, acceptable to the faculty of the College for Teachers for advanced standing, are registered in and are subject to the jurisdiction of this college.

II. The University also offers extended curricula which lead, at the end of the fourth year, to the degree of Bachelor of Arts, conferred upon recommendation of the faculty of the McMicken College of Liberal Arts, and which lead also, at the end of the fifth year, to appropriate teacher's diplomas conferred upon recommendation of the faculty of the College for Teachers.

The courses which shall be included in such extended curricula are determined by the faculty of the College for Teachers, subject to regulations governing students who are candidates for the Bachelor of Arts degree.

Students pursuing such extended curricula are registered in, and are subject to the jurisdiction of, the College for Teachers during the fifth year only.

III. Independently, or in connection with institutions affiliated with it, the University offers special curricula, not less than two years in length, to students who have fulfilled specified entrance

requirements, such curricula leading, upon recommendation of the faculty of the College for Teachers, to appropriate teacher's diplomas. Such diplomas are granted to students who have specialized in kindergarten training, art, household arts, etc., without proceeding to a degree.

Students enrolled in such special curricula are registered in, and are subject to the jurisdiction of, the College for Teachers.

Students who complete such special curricula may subsequently be recommended by the faculty of the College for Teachers for the degree of Bachelor of Science upon conditions determined by this faculty, subject, however, to the completion of two years of undergraduate work accepted by the faculty of the McMicken College of Liberal Arts.

THE OHIO SCHOOL LAW GOVERNING THE CERTIFICATION OF TEACHERS WITHOUT EXAMINATION

The standards of qualification set by the Ohio School Law, which entitle those persons who meet them to the various state certificates without further examination, are also respected in the preparation of the programs offered.

In accordance with this law, the college is "approved by the Superintendent of Public Instruction," and its programs lead to the class of state certificate specified.

These state certificates are "recognized" by nearly every state in the Union, consequently, they are not only "valid in any school district within this state," but because of such wide-spread recognition, permit the holders to teach practically anywhere in the United States in the class of position which such certificates designate.

That part of the Ohio School Law which makes provision for the granting of state certificates without further examination is as follows:

Sec. 7807-3. A graduate from any normal school, teachers' college, college or university, who has completed a full two years' academic and professional course in such institution and who also possesses a first grade high school diploma or its equivalent shall, upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional elementary certificate valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-4. A graduate from any normal school, teachers' college, college or university, who has completed a full four years' academic and professional course in such institution and who also holds a certificate of graduation from a first grade high school or

its equivalent shall, upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional high school certificate valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-5. A graduate from any normal school, teachers' college, college or university, who has completed a special two-year course, with training school experience in music, drawing, penmanship, manual training, physical culture, domestic science, agriculture, kindergartening, any modern language, or such other studies as are required to be taught by special teachers or supervisors and who also possesses a first grade high school diploma or its equivalent, shall upon application to the superintendent of public instruction and the payment of a fee of one dollar, be granted without further examination a provisional special certificate in such subject or subjects valid for four years in any school district within the state; provided that such institution has been approved by the superintendent of public instruction.

Sec. 7807-6. It shall be the duty of the state board of school examiners to issue without examination to every holder of a state provisional certificate, a life certificate of similar kind upon satisfactory evidence that the holder thereof has completed at least twenty-four months of successful teaching, after receiving such provisional certificate.

Sec. 7807-7. The state board of school examiners shall issue without examination, a state life high school certificate to the holder of a degree from any normal school, teachers' college, or university that has been approved by the superintendent of public instruction, upon satisfactory evidence that the holder thereof has completed at least fifty months of successful teaching.

STANDARDS GOVERNING APPOINTMENT AND PROMOTION TO POSITIONS IN THE CINCINNATI PUBLIC SCHOOLS

These standards also have been kept in mind in arranging the programs offered. The regulations governing such appointment and promotion are of interest to every one who contemplates entering the Cincinnati school service, and are as follows:

Section 1. Appointments and promotions to all teaching and supervisory positions in the school system shall be made by the Superintendent of Schools from merit lists based upon personality, scholarship, professional preparation and successful experience.

SECTION 2. There shall be the following lists:

I. A first or preferred list and a second list:

(1) For regular positions in the elementary schools;
(2) For positions in each of the special departments in the elementary schools;
(3) For positions in each of the departments in the high schools;
(4) For each class of principalship and assistant principalship;
(5) For other positions at the direction of the Superintendent of Schools.

II. Special Lists.

SECTION 3. First or preferred lists for appointment and promotion shall be formed from candidates whose teaching has been approved and who possess either of the following qualifications:

(a) Graduation from a standard institution—college, university, normal or special school, the completion of approved professional training, either as a part of or in addition to the course pursued in such institution; or, in lieu of such professional training, successful teaching experience of not less than two years and satisfactory evidence of professional study and growth.

(b) The completion of approved courses in recognized institutions equivalent to those required for graduation from a standard institution including a course in professional training; or, in lieu of such training, successful teaching experience of not less than two years, and satisfactory evidence of professional study and growth.

NOTE.—A "standard" institution is one which requires the completion of a four-year high school course for admission, and not less than 120 semester hours for graduation.

A "recognized" institution is one requiring the completion of a four-year high school course for admission, equivalent to those of a "standard" institution.

SECTION 4. Second lists shall be formed from candidates who have completed a first-grade high school course or its equivalent, and have completed a two-year normal, professional or technical school course, or in lieu thereof, have not less than two years of approved experience in teaching and one year of professional training.

SECTION 5. Special lists for positions requiring technical knowl-

edge and skill shall be formed from time to time at the direction of the Superintendent of Schools from candidates whose education and training qualify them to fill such positions.

SECTION 6. The listing and ranking of candidates for appointment to teaching positions in the elementary schools shall be in charge of the Professor of Elementary Education of the College for Teachers, with the coöperation of the supervisors concerned, in cases affecting the special departments.

SECTION 7. The listing and ranking of candidates for appointment to teaching positions in the high schools and for promotion within the high school service shall be in charge of the Professor of Secondary Education in the College for Teachers, with the coöperation of the supervisors concerned in cases affecting the special departments.

SECTION 8. The listing and ranking of candidates for principalships and assistant principalships shall be in charge of the Assistant Superintendent of Schools, with the coöperation of the Professors of Education in the College for Teachers.

SECTION 9. All lists for appointment and promotion shall be subject to the approval of the Superintendent of Schools.

SECTION 10. Candidates eligible to consideration for positions other than teaching positions, whose qualifications have been tested and approved, shall be ranked according to their relative fitness for the positions to be filled.

SECTION 11. Any teacher eligible under the rules, who has voluntarily withdrawn from the service, whose teaching has been inspected and approved, may, at the option of the Superintendent of Schools, take precedence over all other candidates listed for appointment to the class of position formerly held by such teacher.

SECTION 12. Appointment and promotion lists for all regular positions shall be formed in June of each year, and at such other times as may be necessary, at the direction of the Superintendent.

SECTION 13. Appointments and promotions shall be made in the order of rank on the lists, candidates on the first or preferred list taking precedence over candidates on the second list; however, any properly listed candidate, who is exceptionally qualified for a given position, on account of training, experience, or personality, may, by action of the Superintendent of Schools, after conference with the official who listed such candidate, take precedence over all other persons on either list; all such appointments to be accompanied by a statement of the reasons for the appointment. Residents of Cincinnati who are equal in rank to other candidates, shall receive precedence in appointment.

SECTION 14. A candidate may decline appointment in turn without forfeiting the right to later appointment at any time before the formation of a new list.

PROGRAMS OFFERED

PROGRAM I.—*Leading to the degree of Bachelor of Science, to a Provisional Elementary Certificate, and to the Preferred List from which appointments to positions in the elementary schools of Cincinnati are made.*

(NOTE.—Graduates whose practice teaching has not been entirely satisfactory will not be entitled to positions on the preferred lists.)

ADMISSION.—Before being admitted to this program, a student must satisfy the regular college entrance requirements and complete college courses which count, in the aggregate, sixty college credit hours, i. e., the equivalent of two years of college work. The Dean reserves the right, subject to the approval of the faculty, to refuse admission to any student whose academic scholarship is unsatisfactory.

The following must have been included in the subjects taken by the student in the last two years of the high school course or in the first two years of the college course. If taken in high school, the subject must have been pursued not less than four periods per week for a year; if in college, not less than three periods per week for a year:

English.—Two or three college courses, counting not less than ten college credit hours, in addition to English I.

History-Civics.—A year's course in each of three of the following six fields: ancient history, mediaeval history, modern history, history of England, American history or American history with civics, civics for teachers in the College for Teachers.

Not less than one of the foregoing courses shall be taken in college, and this course must be the course in Civics for Teachers in the case of all students who have not taken the fourth year high school course in American History with Civics. A student who has taken college courses in two of the specified fields may offer for the third field a course taken in the first or second year of the high school.

Science.—A year's course in each of the following three fields is strongly recommended: physical science (physics or chemistry), biological science (botany, zoology, or general biology), earth science (geology or geography).

The requirement in science to be taken in college, however, may be satisfied in one of the following three ways: (1) by taking three-hour courses in two fields; or (2) by taking a three-hour course in one field for a year and a five-hour course in another field for a semester; or (3) by taking a five-hour course in one field.

Educational Psychology.—A three-hour course for a year in this subject is required and may not be taken earlier than the Sophomore year of the college.

Distribution of Work.—The course in psychology and one of the required courses in English, history, or science, respectively, may be distributed over the Sophomore and Junior years, as the student may elect, subject to the approval of the Dean of the College for Teachers.

Courses Required.—During the Junior and Senior years the following courses are required. Subject to the approval of the Dean of the College for Teachers, a student may choose a distribution of work different from that indicated, but in no case shall the amount of work in education during the Junior year be less than that represented by ten credits:

JUNIOR YEAR

Ed. 1.—History and Principles of Education	6 credits
Ed. 14.—Teaching of English	4 "
Philosophy 5a.—Ethics	3 "
Philosophy 5b.—Ethical Interpretations	3 "

SENIOR YEAR

Ed. 2.—Theory and Practice of Teaching	6 credits
Ed. 2p.—Practice Teaching	4 "
Ed. 17.—Educational Administration	3 "
Three of the following:	6 "
Ed. 13.—Seat Work and School Room Devices	2 "
Ed. 16.—The Teaching of History	2 "
Ed. 20.—The Teaching of Arithmetic	2 "
Ed. 22.—The Teaching of Geography	2 "

NOTE.—Ed. 16 may be taken in the Junior year, and Ed. 13 will be required of Seniors who did not elect Ed. 16 in the Junior year.

Elective Courses.—During the Junior and Senior years, the student shall elect courses in the College of Liberal Arts, which shall count not more than thirty credits.

PROGRAM II. *Leading to a Teacher's Diploma in Elementary Education, to a State Provisional Elementary Certificate, and to the Preferred List* from which appointments to positions in the elementary schools of Cincinnati are made.*

ADMISSION.—This program may be completed in a single year, and is open to graduates who have completed an approved four-year college course leading to a Bachelor's degree.

Prerequisite or Parallel Courses:

Psychology 11a and 11b or 1a and 1b	6 credits
Philosophy 5a.—Ethics	3 "
Philosophy 5b.—Ethical Interpretations	3 "
Education 1.—History and Principles of Education	6 "

*See note under Program I, p. 132.

Not more than two of these three subjects may be taken parallel with the required courses in Education indicated below. Any student who has had all three of these subjects, may elect courses which count not less than twelve credits, either in McMicken College of Liberal Arts or in the Graduate School. Any student who has had two of these subjects may elect courses, as above, counting not less than six credits. The courses elected are subject to the approval of the Dean of the College for Teachers.

Courses Required;

Ed. 2.—Theory and Practice of Teaching .....6 credits
Ed. 2p.—Practice Teaching .....4 "
Ed. 17.—Educational Administration .....3 "
Ed. 14.—Teaching of English .....4 "
Ed. 18.—Literature in the Grades .....2 "
Three of the following: .....6 "
  Ed. 13.—Seat Work and School Room Devices ....2 credits
  Ed. 16.—The Teaching of History .....2 "
  Ed. 20.—The Teaching of Arithmetic .....2 "
  Ed. 22.—The Teaching of Geography .....2 "
Prerequisite or parallel or approved elective courses
  (see above) .....6 to 12 credits

PROGRAM III.—*Leading to the Teacher's Diploma in Secondary Education and to the State Provisional High School Certificate, which renders the holder eligible to the Preferred List from which appointments to positions in the high schools of Cincinnati are made.*

(NOTE.—It is to be noted, however, that recommendations for appointments to Cincinnati high school positions are generally limited to teachers of experience, with due reference, moreover, to the principle of promotion within the service.)

ADMISSION.—This program may be completed in a single year; but before entering upon it, a student must complete an approved four-year college course leading to a Bachelor's degree. The subject in which the student wishes to qualify as a high school teacher must have been pursued as a major in the undergraduate course, and the marks received in this subject must show high scholarship. The student must also be recommended by the head of the department in which this major subject was pursued and be accepted by the Dean of the College for Teachers after conference with the Professor of Secondary Education.

Prerequisite or Parallel Courses:

Psychology 11a and 11b or 1a and 1b .....6 credits
Philosophy 5a.—Ethics .....3 "
Philosophy 5b.—Ethical Interpretations .....3 "
Education 1.—History and Principles of Education .....6 "

Not more than two of these three subjects may be taken parallel with the required courses in Education indicated below. Any student who has had all three of these subjects shall elect courses in the Graduate School which count not less than twelve credits. A student who has had two of these three subjects shall elect work in the Graduate School which counts not less than six credits. Of the work elected in the Graduate School, not less than six credits shall be in the field in which the student expects to teach.

Courses Required:

Ed. 3. —Secondary Education	4	credits
Ed. 3p.—High School Assisting	3	"
Method of Teaching the major subject	2 to 4	"
Ed. 7 or 17	3	"
Prerequisite or parallel or elected courses (see above)	6 to 12	"

When a special course in the teaching of the major subject is not offered, a substitute course in Education must be taken. Courses more or less devoted to method in the major subject for secondary school purposes are: English 29, German 10, 30, and 15b, Latin 8, History 36, Botany 5, Zoology 7a, 6b, Mathematics 26, Physics 11.

PROGRAM IV.—*Leading to the degree of Bachelor of Science, to a State Provisional Special Certificate in German, and to the Preferred List* from which appointments to positions as teachers of German in the elementary schools of Cincinnati are made.*

ADMISSION.—The same as Program I.

Courses Required.—The same as Program I with the following exceptions:

1. Education 30 instead of Education 16, 20, or 22.
2. Education 30p instead of Education 2p.
3. Courses in German, as follows:

   For those who have had no German in high school, the equivalent of German 1, 2, 3, 4, 21, 5 and 10 or 30.

   For those who have had two years of German in high school, the equivalent of German 2, 3, 4, 21, 5 and 10 or 30.

   For those who have had four years of German in high school, the equivalent of German 4, 21, 5 and 10 or 30.

In no case will students be permitted to enter upon this program without the ability to speak the German language correctly and fluently.

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*See note under Program I, p. 132.

PROGRAM V.—*A two-year course leading to a Teacher's Diploma, to a State Provisional Special Certificate in Kindergartning, and to the Second List* from which Assistant Kindergarten Directors in the public schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program a student must satisfy the regular college entrance requirements, be at least eighteen years of age, and be able to sing simple songs and play the piano accompaniments.

Courses Required:

Ed. 23	3	credits
Ed. 25	3	"
Ed. 27	3	"
Ed. 29	3	"
Ed. 28	2	"
English 1	6	"
Elective	4 to 6	"

Approved courses in kindergarten training entitled to thirty-six credits, including twelve credits for practice and observation in the public school kindergartens of Cincinnati.

PROGRAM VI.—*A two-year course leading to a Teacher's Diploma, to a State Provisional Special Certificate in Art, and to the Second List* from which teachers and supervisors of Art in the public schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program, a student must satisfy the regular college entrance requirements and must complete an amount of work in Art of approved quality equivalent to that represented by two years of study in the Art Academy of Cincinnati. It is understood, moreover, that all students are admitted upon a month's probation during which they must give satisfactory evidence of a high degree of capability in Art and show that they are otherwise qualified to pursue this program.

Courses Required:

Ed. 23	3	credits
Ed. 25	3	"
Ed. 27	3	"
Ed. 29	3	"

The courses scheduled under Art Education on pp. 149-150.

Work at the Art Academy of Cincinnati in the mornings the first year, and on M., T., W., F., and S. mornings the second year.

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*See note under Program I, p. 132.

PROGRAM VII.—*A two-year course leading to a Teacher's Diploma, to a State Provisional Special Certificate in Household Arts, and to the Second List* from which teachers of the household arts in the public elementary schools of Cincinnati are appointed.*

ADMISSION.—Before entering upon this program, a student must satisfy the regular college entrance requirements, submitting at least two units of credit for Domestic Science and Domestic Art taken in high school.

The student must also be at least eighteen years of age.

Courses Required·

Ed. 23	3	credits
Ed. 25	3	"
Ed. 27	3	"
Ed. 29	3	"
Household Arts Ed. 1	3	"
Household Arts Ed. 2	3	"
Household Arts Ed. 2p	4	"

Household Arts courses, including Foods, Nutrition 1, 2a, 2b, Textiles 8a, 8b, 9, and Household Economics 6, aggregating at least forty credits in the School of Household Arts.

PROGRAM VIII.—*Leading to the degree of Bachelor of Science, to a State Provisional Certificate for Teachers of Defective Children, and to the Preferred List* from which appointments to positions as teachers of defectives in the schools of Cincinnati are made.*

ADMISSION.—The same as Program I.

Courses Required:

Ed. 1	6	credits
Ed. 2	6	"
Ed. 14	4	"
Ed. 15	4	"
Ed. 17	3	"
Psychology 9	4	"

PROGRAM IX.—*A four-year course leading to the degree of Bachelor of Science, and to the State Provisional Special Certificate in Commercial Branches which renders the holder eligible to the Preferred List* from which are made appointments to positions in the Cincinnati high schools.*

ADMISSION.—Open to graduates of the Cincinnati High School Commercial Course (or other high school graduates with equivalent preparation) and to present and prospective teachers of commercial branches.

This program is made up of two parts.

*See note under Program I, p. 132.

I. Two-year pre-commercial course, as follows:

	Credits		Credits
Eng. 1	6	or Eng. Comp. (Eve.)	4
Econ. 1	6	or Econ. (Eve.)	4
Econ. 2	4	or Econ. Hist. (Eve.)	4
Econ. Problems	4	Econ. Problems (Eve.)	4
Econ. 30	4	or Commercial Geog. (Eve.)	4
Econ. 31	4	or Statistics (Eve.)	4
Math. 1	6	or Math. (Eve.)	4
Psy. 11 and 11b	6	or Business Psy. (Eve.)	4

40 or 32 Credits.

Elected courses which may include *one* commercial course each year ..... 28 or 20 credits

Total, 60 "

II. Work of the Junior and Senior years:

The Fundamental subjects of the first year in the College of Commerce:

Business Administration	(Eve.)	4 credits
Accounting	(Eve.)	4 "
Marketing	(Eve.)	4 "
Buyer and Seller	(Eve.)	4 "
Finance	(Eve.)	4 "
		20 credits

Professional Requirements in Education:

Psychology (4 or 6 credits fulfilled above)

Principles of Education	Ed. 11	3 credits
School Organization	Ed. 17	3 "
General Method	Ed. 6	4 "
Special Method	Ed. 31	3 "
Observation and Practice Teaching	Ed. 31p	4 "
		17 credits

Elected courses in College of Commerce, College for Teachers, College of Liberal Arts ..... 23 credits

TOTAL ..... 60 credits

The designation (Eve.) indicates courses given in the evening classes of the College of Liberal Arts or the College of Commerce.

GEOLOGY AND GEOGRAPHY

For a complete list of the courses offered by the Department of Geology, see the Announcement of the McMicken College of Liberal Arts.

14. General Geology for Teachers.—Elements of dynamic, structural, and physiographic geology, being identical with the corresponding parts of Course 1. Lec., S., 8:30-10:30; field or lab., 10:30-12:30. Professor Fenneman.

16. Advanced Physiography of the United States.—Lec., W., 4:00-6:00; S., 10:30-11:30. Professor Fenneman.

Course 16 runs through more than one year, but may be entered at the beginning of any semester.

19. Historical Geology.—For teachers who have had Course 14. Lec., S., 8:30-10:30; field or lab., 10:30-12:30.
Assistant Professor Carman.

20. Physiography of Europe.—Course 1 (or 14) and Course 9 (or 19) are prerequisite. Lec., W., 4:00-6:00. Dr. Bucher.

HISTORY

For a complete list of all the courses offered in the Department of History, see the Announcement of the McMicken College of Liberal Arts.

History 15. General Course in American History.—This course, while open to all, is required of those who have not had American history in the high school and who contemplate taking work in the College for Teachers. M., W., 11:30-12:30; F., 1:00-2:00. Associate Professor Cox.

History 36. Materials and Methods in Secondary History.—A course for secondary school teachers and those preparing for high school positions. *First semester*, one hour, to be arranged.
Associate Professor Cox.

LATIN

For a complete list of courses offered by the Department of Latin, see the Announcement of the McMicken College of Liberal Arts.

8. Latin Teaching.—Practical exercises in teaching secondary Latin. S., one hour to be arranged. Assistant Professor Semple.

PHILOSOPHY

For a complete list of all the courses offered by the Department of Philosophy, see Announcement of the McMicken College of Liberal Arts.

5a. Ethics.—Open to students who have completed two years of work in the University. *First semester.* Sec. I, M., W., F., 10:30-11:30; sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Professor Tawney and Assistant Professor Hartman.

5b. Ethical Interpretations.—*Second semester.* Sec. I, M., W., F., 10:30-11:30; sec. II, M., W., 1:00-2:00; F., 2:00-3:00.
Professor Tawney and Assistant Professor Hartman.
Prerequisite: Course 5a.

8b. Aesthetics, the Theory of Art and the Beautiful.—*Second semester,* T., Th., 9:30-10:30. Assistant Professor Hartman.
Prerequisite: Psychology 1a and 1b or 11a or 11b.

12. Thought Movements of the Nineteenth Century.—For teachers. S., 8:30-9:30. Professor Tawney.

POLITICAL AND SOCIAL SCIENCE

Political Science 8. Civics for Teachers.—The primary aim of this course is to prepare prospective teachers to give instruction in civics in the schools. The nature and organization of our American government will be studied with particular attention to the government of Cincinnati. M., W., F., 1:00-2:00.
Assistant Professor Gardner.

PSYCHOLOGY

For a complete list of courses offered by the Department of Psychology, see the Announcement of the McMicken College of Liberal Arts.

Psychology 11a. Educational Psychology.—A study of the facts of mental life and of their relation to education. Open only to those who are candidates for a degree in the College for Teachers. *First semester,* M., W., F., 3:00-4:00. Professor Breese.

Psychology 11b. A continuation of Psychology 11a. *Second semester,* M., W., F., 3:00-4:00. Professor Breese.

Courses 11a and 11b are prerequisite to entrance upon the study of education, as indicated in professional programs for teachers outlined on pp. 132-139. Those who wish to pursue one of these programs should take these courses in psychology not later than the Junior year. Those who wish to qualify for a teacher's diploma after graduation from the College of Liberal Arts may take these prerequisite courses in psychology during the Senior year.

Psychology 6a. Advanced Educational Psychology.—The experimental and statistical methods in mental measurements. Intended for advanced students and teachers of experience. Two credit hours. *First semester.* Hours to be arranged. Professor Breese.

Psychology 9. Mental and Physical Tests.—Laboratory methods. Two credits per semester.* Hours to be arranged.
Professor Breese and Mr. Isaacs.

ART EDUCATION

The following courses of instruction, when not otherwise specified, are given at Hughes High School.

First year students will take Courses 2, 3, 4, and 5 or 9. During the forenoon of each day they will work at the Art Academy. They will also take, at the University, Education 23 and 25.

Second year students will take Courses 1, 6, 7, 8, and 5 or 9. On forenoons and afternoons, except Thursday, they will continue work at the Art Academy. At the University they will take Education 27 and 29.

Art. 1. Theory and Practice of Teaching Art.—Principles upon which art teaching is based. The function of art in general education. Consideration of courses of study. Making of lesson plans and outlines of work for elementary and secondary schools. Principles of criticism. Discussion of methods and devices. F., 1:30-3:30.
Miss Hyde.

Art 2. Water Colors and Crayons.—Landscape, nature products, pose and still life. Practice in arrangement of still life studies for the sake of good composition and harmony of color. T., 1:00-4:00.
Mr. Teal.

Art. 3. Design and Applications.—Study of the principles of balance, rhythm and harmony, in line, dark and light, and color. Fitness of design in form, tone and color, in relation to various applications. Design applied to embroidery, stenciling, weaving, basketry, metal and leather work. W., 1:30-4:00. Miss Hyde.

Art 4. Construction and Clay Work.—Paper and cardboard construction. Weaving, stenciling, book binding, block printing, metal and leather work, basketry, pottery, and knife work. Th., 1:00-4:00. Miss Hyde.

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*In connection with this course, the department maintains a psychological clinic for school children on Tuesday mornings from 9:00 to 12:30. Dr. William Ravine, neurologist, representing the Board of Health, and Miss Emma Kohnky, principal of the Special School, assist in the examination of the children sent to the clinic. Students in Psychology 9 may by special arrangement observe the work of the clinic.

Art 5. Pictorial Composition.—Critical study of landscape composition in black and white, in tones of middle gray, and in color. Figure compositions in color. Illustrated talks on the old masters and comparisons of their work with modern art. Instruction in blackboard illustration suited to the needs of teachers of regular subjects in elementary and secondary schools. Given in alternate years. M., 1:30-4:00. Mr. Teal.

Art 6. Advanced Design.—A further study of questions taken up in Art 3. Study of historic ornament. Adaptation of nature forms in design. Influence of materials on design. Theory of color. Designing of interiors with the study of original color schemes. W., 1:00-3:30. Mr. Teal.

Art 7. Observation and Practice Teaching.—One day per week in the public elementary and secondary schools under critical supervision. Miss Alexander and Miss Hyde, critics.

Art 8. History of Art.—A study and amplification of Reinach's Apollo with the aid of photographs and plates in the Cincinnati Art Museum Library. Students required to make notes, outlines, and chronological tables. Instruction and practice as guides of visitors to the Art Museum. At the Art Museum. Tu., 2:00-4:00. Miss Kellogg.

Art 9. Mechanical Drawing.—Use and care of materials and instruments. Simple geometric problems. Lettering. Scale drawing. Isometric and orthographic projections. Intersections. Machine drawings. House plans and elevations. Tracing and blue printing. Given in alternate years in place of Art 5. M., 1:30-4:00. Director Vogel.

HOUSEHOLD ARTS EDUCATION

1. Organization and Administration.—This course deals with the application of educational standards to industrial and household arts subjects as taught in elementary schools. *First semester*, M., W., F., 10:30-11:30. Professor Strong and Assistant Professor Toaz.

2. Theory and Practice of Teaching Household Arts.—This course considers the special methods of teaching household arts in elementary and secondary schools with reference to problems in foods, clothing, and shelter. Open to Seniors and graduates. *Second semester*, M., W., F., 10:30-11:30.
Professor Strong and Assistant Professor Toaz.

2p. Practice Teaching and Observation.—Observation and practice teaching in Household Arts subjects, with conference hour. It is desired that students taking this course keep Tuesday and Thursday forenoons free for practice teaching and observation, and

Monday or Wednesday afternoons free for the conference hour. Throughout the year. Two credits per semester.

Professor Strong and Assistant Professor Toaz.

3. Practicum in Household Arts.—Recent developments in the organization and curricula of the public school systems. The relation of Household Arts thereto, with investigations as to existing courses of study and current experiments. Dissertations; individual problems; research. S., 9:30-11:30. Professor Strong.

(This course will be given if there is a registration of ten or more.)

KINDERGARTEN TRAINING

The following courses in Kindergarten Training, not given at the University, may be taken at the Cincinnati Kindergarten Training School.

For conditions governing college students who are fitting primarily for positions in kindergartens, see Program V, page 136.

The Cincinnati Kindergarten Training School issues a special announcement giving full information, a copy of which may be had upon application to the Registrar.

COURSES

Kgtn. 1. Gifts.—W., 8:30-10:00, for Juniors; W., 1:30-3:00, for Seniors.

Kgtn. 2. Handwork.—T., Th., 2:30-4:30.
Miss Stone and special teachers.

Kgtn. 3. Rhythms, Songs, and Games.—Th., 1:30-2:30. Miss Fry.

Kgtn. 4. Theory.—T., 1:00-2:00; Th., 8:30-10:00.

Kgtn. 5. Stories.—M., 1:00-2:00. Miss Simrall.

Kgtn. 6a. Program Construction.—Th., 10:00-12:00.
Miss Bothwell.

Kgtn. 6b. Program Plans.—T., 3:30-4:30. Miss Stone, Miss Fry.

Kgtn. 7. Observation.—Thursday and Friday mornings.
Miss Stone, Miss Fry.

Kgtn. 8. Practice Teaching.—Monday, Tuesday, and Wednesday mornings. Miss Stone, Miss Fry.

Kgtn. 9. Organization of Mothers' Meetings.—Hours to be arranged. Miss Laws, Miss Stone.

Kgtn. 10. Art.—T., 10:30-12:30. Mr. Thompson.

Kgtn. 11. Music.—Hours to be arranged.
Mr. Aiken, Miss Fry, Miss Rains.

Kgtn. 12. Hygiene and Physical Training.—Hours to be arranged.

Kgtn. 13. Directors' Conference.—Lectures, discussions, suggestions for program work. Miss Bothwell, Miss Stone, Miss Fry.

SCHEDULE OF LECTURES—COLLEGE OF LIBERAL ARTS

FIRST SEMESTER, 1916-17

Courses which are starred are open to Freshmen

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURI
8:30 A.M.	*Bot. 1a-S. i *Chem. 1a Chem. 5a Chem. 12a Eng. 16 Eng. 6 *Geol. 1 *Ger. 2-S. i *Greek 9 Hist. 16 *Math. 1-S. i Phil. 3a Pol. Sc. 11a Pol. Sc. 2a	*Bot. 2a-S. iv Chem. 10a Eng. 2a *Eng. 9-S. i *French 1-S. ii French 26 *Geol. 1-S. ii Geol. 9 Geol. 8 *Ger. 1-S. i *Hist. 29 *Lat. 1-S. i *Math. 4 *Phys. 2a-S. i Pol. Sc. 6 *Zool. 2-S. iii	*Bot. 1a-S. i *Chem. 1a Chem. 5a Chem. 12a Eng. 16 Eng. 6 *Geol. 1 *Ger. 2-S. i *Greek 9 Hist. 16 *Math. 1-S. i Phil. 3a Pol. Sc. 11a Pol. Sc. 2a	*Bot. 2a-S. iv Chem. 10a Eng. 2a *Eng. 9-S. i *French 1-S. ii French 26 *Geol. 1-S. ii Geol. 9 Geol. 8 *Ger. 1-S. i *Hist. 29 *Lat. 1-S. i *Math. 4 *Phys. 2a-S. i Pol. Sc. 6 *Zool. 2-S. iii	*Bot. 1a-S. i *Chem. 1a Chem. 5a Chem. 12a Eng. 16 Eng. 6 *Geol. 1 *Ger. 2-S. i *Greek 9 Hist. 16 *Math. 1-S. i Phil. 3a Pol. Sc. 11a Pol. Sc. 2a	*French 1- Geol. 14 Geol. 19 *Ger. 1-S. i *Lat. 1-S. i *Math. 4 Phil. 12 Phys. 11 Zool. 7a
9:30 A.M.	Chem. 16a *Econ. 1 *Eng. 5 *French 2-S. i *French 2-S. iii Geol. 2 *Ger. 1-S. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-S. ii *Math. 1-S. ii *Math. 3 Math. 15 Phil. 2a Soc. Sc. 15 *Span. 6-S. i *Zool. 1	*Bot. 2a-S. iii *Bot. 2a-S. iv Econ. 11 *Eng. 3 *Eng. 9-S. ii Eng. 10 Eng. 14 *French 2-S. ii French 4 *Geol. 1-S. ii Geol. 2 *Ger. 2-S. ii *Ger. 21 Greek 20a Hist. 2 *Math. 1-S. iv Phil. 8a *Phys. 2a-S. i Phys. 28a Soc. Sc. 5 *Zool. 2-S. iii	Chem. 16a *Econ. 1 *Eng. 5 *French 2-S. i *French 2-S. iii Geol. 2 *Ger. 1-S. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-S. ii *Math. 1-S. ii *Math. 3 Math. 15 Phil. 2a Soc. Sc. 15 *Span. 6-S. i *Zool. 1	*Bot. 2a-S. iii *Bot. 2a-S. iv Econ. 11 *Eng. 3 *Eng. 9-S. ii Eng. 10 *Eng. 14 *French 2-S. ii French 4 *Geol. 1-S. ii Geol. 2 *Ger. 2-S. ii *Ger. 21 Greek 20a Hist. 2 *Math. 1-S. iv Phil. 8a *Phys. 2a-S. i Phys. 28a Soc. Sc. 5 *Zool. 2-S. iii	Chem. 16a *Econ. 1 *Eng. 5 *French 2-S. i *French 2-S. iii Geol. 2 *Ger. 1-S. ii Ger. 5 *Greek 1 *Hist. 1 *Lat. 1-S. ii *Math. 1-S. ii *Math. 3 Math. 15 Phil. 2a *Span. 6-S. i *Zool. 1	Eng. 10 Eng. 21 Eng. 14 Eng. 29 *French 2- Geol. 14 Geol. 19 *Ger. 2-S. i Ger. 30 *Math. 1-S Phys. 11 Psy. 20 Zool. 7a
10:30 A.M.	Chem. 20 Econ. 15a *Eng. 1 (9 Sec.) *French 11 Geol. 2 *Ger. 2-S. iii *Ger. 4-S. i Greek 3 Hist. 3 Lat. 2 *Math. 1-S. iii Math. 5 Phil. 1a Phil. 5a-S. i Phys. Ed. 2-S. i (Men) Pol. Sc. 1 Soc. Sc. 7	*Bot. 2a-S. iii *Bot. 2a-S. iv *Econ. 2 Eng. 25-S. i *Geol. 1-S. ii Geol. 7 *Ger. 3 Greek 13 Hist. 25 Lat. 6 Math. 5 Phys. Ed. 2-S. ii (Men) *Phys. 2a-S. i Soc. Sc. 20 *Zool. 2-S. iii	Chem. 20 Econ. 15a *Eng. 1 (9 Sec.) *French 11 Geol. 2 *Ger. 2-S. iii *Ger. 4-S. i Greek 3 Hist. 3 Lat. 2 *Math. 1-S. iii Phil. 1a Phil. 5a-S. i Phys. Ed. 2-S. i (Men) Pol. Sc. 1 Soc. Sc. 7	*Bot. 2a-S. iii *Bot. 2a-S. iv *Econ. 2 Eng. 25-S. i *Geol. 1-S. ii Geol. 7 *Ger. 3 Greek 8 Hist. 25 Lat. 5 Math. 5 *Phys. Ed. 2-S. ii (Men) *Phys. 2a-S. i Soc. Sc. 20 *Zool. 2-S. iii	Chem. 20 Econ. 15a *Eng. 1 (9 Sec.) *French 11 Geol. 7 *Ger. 2-S. iii *Ger. 4-S. i Greek 3 Hist. 3 Lat. 2 *Math. 1-S. iii Math. 5 Phil. 1a Phil. 5a-S. i Pol. Sc. 1	Eng. 21 Eng. 29 French 30 Geol. 16 Geol. 14 Geol. 19 Ger. 30 Hist. 39 Phys. 11 Psy. 20 Zool. 7a
11:30 A.M.	*Bot. 1a-S. ii Eng. 4 Eng. 7 *French 1-S. i French 15 *Ger. 4-S. ii *Greek 15 *Hist. 15 *Ital. 7 *Phys. Ed. 1-S. i (Men) *Phys. 26a Psy. 1a Soc. Sc. 21 *Span. 6-S. ii *Span. 6-S. iii	Bib. Lit. 11a *Bot. 2a-S. iii Econ. 17 Eng. 25-S. ii Eng. 17 French 3 Geol. 7 *Ger. 20 Greek 17 Hist. 59 Lat. 3 *Phys. Ed. 1-S. ii (Men) Phys. 19a Zool. 5	*Bot. 1a-S. ii Eng. 4 Eng. 7 *French 1-S. i French 15 *Ger. 4-S. ii *Greek 15 *Hist. 15 *Ital. 7 *Phys. Ed. 1-S. i (Men) *Phys. 26a Psy. 1a Soc. Sc. 21 *Span. 6-S. ii *Span. 6-S. iii	*Bot. 2a-S. iii Econ. 17 Eng. 25-S. ii Eng. 17 French 3 Geol. 7 *Ger. 20 Greek 17 Hist. 59 Lat. 3 *Phys. Ed. 1-S. i (Men) Phys. 19a Zool. 5		Geol. 14 Geol. 19 Greek 17 Hist. 39 Phys. 19a Zool. 7a

SCHEDULE OF LECTURES—COLLEGE OF LIBERAL ARTS

FIRST SEMESTER, 1916-17

Courses which are starred are open to Freshmen

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
0 A.	*Bot. 2a-S. i Bot. 6a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 Chem. 13a Eng. 26a Eng. 27 *Ger. 1-S. iii *Hist. 13 Phil. 5a-S. ii *Phys. Ed. 1-S. i (Women) Phys. 4a Pol. Sc. 8 *Span. 9 *Zool. 2-S. i Zool. 10a	*Bot. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Chem. 13a Eng. 13a Eng. 18 Eng. 24 *Geol. 1-S. iii Hist. 20 Phil. 31 *Phys. Ed. 1-S. ii (Women) *Phys. 2a-S. ii Pol. Sc. 3a *Span. 18 *Zool. 2-S. ii Zool. 13a	*Bot. 2a-S. i Bot. 7a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 Eng. 26a Eng. 27 *French 5 *Ger. 1-S. iii *Hist. 13 Phil. 5a-S. ii *Phys. Ed. 1-S.i (Women) Phys. 4a Pol. Sc. 8 *Span. 9 *Zool. 2-S. i Zool. 10a	*Bot. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Eng. 18 Eng. 24 *Geol. 1-S. iii Hist. 20 Phil. 30 *Phys. Ed. 1-S. ii (Women) *Phys. 2a-S. ii Pol. Sc. 3a *Span. 18 *Zool. 2-S. ii Zool. 13a	*Bot. 1a-S. ii Eng. 4 Eng. 7 *French 1-S. i French 15 *Ger. 4-S. ii *Greek 15 *Hist. 15 *Ital. 7 *Phys. 26a Psy. 1a *Span. 6-S. ii *Span. 6-S. iii	
0 A.	*Bot. 2a-S. i Bot. 11 Bot. 7a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 Chem. 13a *Geol. 1-S. i Geol. 9 Lat. 3 Phys. Ed. 2-S. i (Women) Phys. 4a Psy. 2a *Span. 14 *Zool. 2-S. i Zool. 10a	*Bor. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Chem. 13a Eng. 13a Eng. 22 *Geol. 1-S. iii *Geol. 1-S. iv Phil. 31 Phys. Ed. 2-S. ii (Women) *Phys. 2a-S. ii *Zool. 2-S. ii Zool. 14a	*Bot. 2a-S. i Bot. 7a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 *Geol. 1-S. i Phys. Ed. 2-S. i (Women) Phys. 4a Psy. 2a *Span. 14 *Zool. 2-S. i Zool. 10a	*Bot. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Eng. 22 *Geol. 1-S. iii *Geol. 1-S. iv Phil. 30 Phys. Ed. 2-S. ii (Women) *Phys. 2a-S. ii *Zool. 2-S. ii Zool. 14a	Chem. 7 Eng. 27 *French 5 Geol. 8 *Ger. 1-S. iii Greek 6 *Hist. 13 Phil. 5a-S. ii Phys. Ed. Vol. (Women) Pol. Sc. 8 Psy. 2a *Span. 9 Zool. 10a	
0 A.	*Bot. 2a-S. i Bot. 7a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 Chem. 13a *Geol. 1-S. i Geol. 9 Greek 7 Phys. 4a Psy. 2a (4:30) *Zool. 2-S. i Zool. 10a	*Bot. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Chem. 13a *Geol. 1-S. iii *Geol. 1-S. iv *Phys. 2a-S. ii Psy. 9 (3:30) *Zool. 2-S. ii Zool. 14a	*Bot. 2a-S. i Bot. 7a *Chem. 2a-S. i Chem. 6-S. i Chem. 7 *Geol. 1-S. i Phys. 4a Psy. 2a (4:30) *Zool. 2-S. i Zool. 10a	*Bot. 2a-S. ii Bot. 5 *Chem. 2a-S. ii Chem. 6-S. ii Eng. 12 *Geol. 1-S. iii *Geol. 1-S. iv Greek 5 *Phys. 2a-S. ii Psy. 4 Span. 8 *Zool. 2-S. ii Zool. 14a	Chem. 7 Geol. 8 Greek 6 *Phys. Ed. 1-Lec. (Men) *Phys. Ed. 1-Lec. (Women) Psy. 2a (4:30) *Span. 14 Zool. 10a	
0 A.	Eng. 20 *Geol. 1-S. i Geol. 9 Greek 7 Pol. Sc. 25 (6:00)	Eng. 8a French 24 (6:00) *Geol. 1-S. iv Math. 25 (6:00) *Phys. Ed. 1-S. iii (Men) Phys. Ed. 2-S. iii (Men) Phys. 10 (6:00) Psy. 9 (5:30) Zool. 14a	Eng. 11 Eng. 40 (6:00) Eng. 19 (6:00) Eng. 23 (6:00) *Geol. 1-S. i Geol. 16 (6:00) Ger. 7 (6:00) Math. 26	Eng. 12 *Geol. 1-S. iv Ger. 6 (6:00) Math. 25 (6:00) *Phys. Ed. 1-S. iii (Men) Phys. Ed. 2-S. iii (Men) Psy. 4 Span. 8 Zool. 14a	Chem. 7 Geol. 8 Greek 21 Math. 26 (6:00) Zool. 10a	
0-0 A.	Econ. 21 Eng. 20	Eng. 8a Eng. 30-S. ii	Econ. 33 Econ. 30 Eng. 11	Phil. 24		
0-0 A.	Eng. 33 Ger. 35 Phil. 23 Pol. Sc. 30 Soc. Sc. 5 Zool. 50 (Lec.)	Eng. 35 French 33 Psy. 30 Span. 32	Econ. 34a Ger. 33 Hist. 58 Math. 40 Psy. 32 Span. 34	Econ. 32 Eng. 30-S. i Ger. 34 Hist. 49 Psy. 31 Zool. 50 (lab.)	Bib. Lit. 30 French 35 Math. 42 Span. 31	
	HOURS TO BE ARRANGED					
	Ast. 3 Ast. 4 Bot. 10 Bot. 20 Bot. 21 Chem. 17	Chem. 11 Chem. 34a Chem. 21 Chem. 30 Chem. 40 French 10 Geol. 12 Geol. 13	Greek 4 Greek 10 Hist. 36 Ital. 16 Lat. 4 Lat. 7 Lat. 8	Lat. 9 Lat. 10 Lat. 12 Math. 27 Math. 40 Phys. 8 Phys. 33a	Phys. 7 Phys. 9 Pol. Sc. 26 Soc. Sc. 22 Psy. 3 Zool. 31	

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